THE

SOUTHERN AGRICULTURIST.

JULY, 1836.

PART I.

ORIGINAL COMMUNICATIONS.

An Address delivered before the Horticultural Society of Charleston, at the Anniversary Meeting, May 5th, 1836; by JOEL R. POINSETT, Esq.

(Concluded from page 291.)

A taste for gardening is gradually making its way into this country, or I ought rather to say, is gradually reviving in this country. Previous to the Revolution, there existed in the South many country seats, which were maintained with great care, and exhibited examples of the taste of the mother country at that period. One by one they fell to decay. The abolition of entails, that salutary republican principle, contributed no less than the utilitarianism, which pervaded the land, to destroy these remains of the splendour of former times. The groves and avenues, with some remarkable and honourable exceptions, were cut down and sold to the carpenter and ship-builder; the plough furrowed the smooth shorn lawn, and the garden grounds were listed up and planted in corn and cotton. After a lapse of some years, which witnessed the destruction of nearly all the country seats, that displayed taste and refinement, a better spirit began to prevail. It arose in the East, and is gradually extending itself South and to the far West. Within a few years the environs of Boston have presented the best specimens in the art of gardening to be met with in the United States.

This taste has gradually advanced South, and gardens combining usefulness with picturesque beauty, are to be seen in the vicinity of New-York, Philadelphia and in Washington. In the neighbourhood of our own city we have gardens, which combine beauty and utility in a manner highly creditable to the possessors. Our climate, however, presents an obstacle to the more perfect embellisment of grounds. One of the peculiar, and perhaps the most striking feature in English garden scenery is the rich verdure of their parks and lawns and deep borders. Every where the eye reposes upon the deep green sward, interspersed with beds of black mould, rising in graceful forms, and crowned with gay coloured flowers. With our present mode of culture, we find it impossible to imitate this beautiful distribution of ground. Our hot and parching sun burns up and destroys all verdure, and leaves the surface of the earth brown and arid. Flowers of great beauty spring from the soil in abundance and variety; but although individually equal to any in the world, they want the fine effect which the deep coloured mould and bright verdure give to the flowers in England. This element of beauty in Great-Britain is due altogether to climate. No application of the practice of English gardening, no mowing or rolling would cover our lawns with green sward in midsummer. Continual moisture, a cloudy sky and frequent showers clothe their fields with nature's richest livery; while in Asia and in the South of Europe and America, the same effect is produced by irrigation. Some of the most beautiful illustrations of sacred poetry, prove the existence of this art in the East from time immemorial. We gather from Homer's description of the garden of Alcinous, the knowledge of its existence among the Greeks at that period. He tells us, that the fruit trees and hedges, and beds of herbs and flowers, were so contrived as to be irrigated by fountains. We are told by Gibbon, that in the grove of Orontes, a thousand streams of the purest water issuing from every hill, preserved the verdure of the earth. All the Roman writers who treat of Agriculture, speak of the necessity of irrigating plants. Varro tells us, that the Roman farmers and gardeners paid their adorations to the goddess *Lympha*, "because culture is a drought and a misery without water." Wherever the Romans carried their arts and their arms, they introduced the

practice of irrigation. Some of the most stupendous works of that people, as their ruins testify, were extensive aqueducts to convey water from distant sources to distribute it over the plains, and fertilize the whole face of the country. A practice which is still continued in the South of Europe; the great productiveness of that country being due entirely to irrigation. By this means, the verdure in many parts of Spain, where the soil is arid and the sun parching, is preserved throughout the summer. The Spaniards who derived this practice from the Moors, carried it with them to the Americas; but to their surprise, they found the native inhabitants in that country well acquainted with the art of irrigating their fields and gardens. Before the invasion of the Spaniards, there existed in Chile and Peru, extensive canals and aqueducts for the purpose of irrigating their vallies and plains. In Mexico, the lakes were covered with floating gardens, which were rendered immensely productive by the free use of water. These works were destroyed by their ruthless conquerors, and their existence is marked only by their ruins; but wherever the land is well cultivated by the colonists, they have constructed similar works for bringing water from the rivers or sources above, to distribute it over their fields. In Spain, their still exist specimens of Moorish gardens, all well irrigated, of which the best preserved are the one at Alcala, near Seville, and that on the Serra del Sol, near Grenada. The former still exhibits the luxurious taste of that people. The walks being paved with marble and watered by fountains, and the parterres laid out by evergreens, and shaded with Orange trees, maintained in all their freshness and beauty by rills of water which visit every plant. In Spain and in Italy, an abundant supply of water is considered essential to the beauty of a garden, and all their grounds are ornamented with fountains; sometimes so contrived as to sprinkle the visiters with water upon their stepping unawares on a concealed spring—this is puríle; but the power of producing this effect shows an abundant supply of water for more useful purposes.

One of the most extensive and most perfect systems of surface irrigation that exist any where, is practised in this State in the culture of Rice. It is, however, applied to the cultivation of no other plant or grain. It is true, that none but aquatic plants would bear to be covered

with water for days together; but all would thrive better by having water brought to their roots at intervals during cloudy weather, or in the evenings. The effect of this mode of culture upon wheat and barley crops is truly astonishing, and there is little doubt, that these grains might be raised in this latitude, and in the low country of Carolina and Georgia, by judicious water-culture. The beneficial effects of the natural irrigation of the lands of Egypt, by the annual overflowing of the Nile, are familiar to all; but in our own country, irrigation is confined to rice-lands; and only in some few instances extended to meadows, where the produce is quadrupled by it. In the East, in whatever spot there rises a river of living water, and through whatever valley it flows, there may be seen a garden winding along its whole extent. "We shall reach a garden to-night," is a cheering word to the heated and wearied traveller of the desert. In imagination he bathes in the running stream, and reposes in shady groves. There, every tree is planted by the rivers of water, that *it may bring forth it fruit in its season and its leaf not wither;* and every stream is associated with ideas of verdure, freshness and repose.

Wherever in those countries the rivers flow through level plains and in deep channels, so that the water cannot be forced to the surface of the banks by dams, it is raised by wheels and other contrivances, so as to be distributed over the fields. The children of Israel are represented as "sowing their seed and watering it with their foot," meaning, as is supposed, that they raised the water of the Nile by a machine worked by their feet. In many parts of Asia and America, where the inhabitants are not so fortunate as to reside near a river, they raise water by machines from pools and deep wells. The most common contrivance for raising water in the East, is the Persian wheel, an invention of great power and of the remotest antiquity. By similar means water might be raised from our low rivers, or from deep wells, and be distributed by canals and ditches over the level surface of our fields and gardens. In the upper parts of our country, the water may easily be diverted from its accustomed channel by bleeding the river, as the Spaniards term this operations, high enough above to bring the water along the sides of hills in small canals, whence it may be made to flow in rills over the broad vallies, until it re-

gains the channel below them. Care must be taken that it does flow off; for a successful water culture depends upon the power of draining, as well as supplying the fields with water. I am aware, that to practise irrigation on extensive scale, requires some previous knowledge, which cannot be imparted in a paper like this. My object, at present, is merely to call the attention of the Society to this important subject. The talents and industry of our fellow-citizens, if directed that way, would soon teach them to avail themselves of the means used in other countries, where irrigation is extensively practised; and their ingenuity, whenever exerted for the purpose, would soon lead them to important improvements in the art. I can only assure them, that their talents, industry and ingenuity could not be employed in any other manner more beneficially for the country; or, as farmers, more profitably to themselves. The attention of the Society ought especially to be directed to this subject, as offering the most certain means of increasing the produce, size and flavour of fruits and vegetables; and of heightening the beauty and fragrance of flowers.

I should do injustice to the Society and to my own feelings, if I did not bear testimony to their unwearied efforts to promote the object we had in view at its first formation; and congratulate them upon their success. The fruit and vegetable market in Charleston, will now bear a comparison with the most favoured in the United States; and these exhibitions and the impartial award of medals have been productive of the most beneficial effects. While I congratulate you upon the success which has hitherto attended your efforts, let me exhort you to persevere, and acquire a new title to the gratitude of your fellow-citizens, by striving to introduce into our country, and to acclimatize new fruits and vegetables, and useful or ornamental plants. Let every member whom business, or the pursuit of health or pleasure leads to travel in foreign lands, bring back with him seeds and plants not hitherto cultivated here; if one of these succeeds, he will be rewarded by the consciousness of having conferred a lasting benefit upon his country, and would merit and receive the thanks of the Society. It would very far exceed the limits of this address to enumerate the useful and ornamental plants which might be successfully introduced here,

from countries whose climate and soil resemble our own. We possess great advantage of climate of which we have not availed ourselves to their full extent; the plants of Japan and of the Cape-of-Good-Hope, with few exceptions, flourish in the open air in this country, and attain an height and perfection of leaf and flower, which no art or care can give them in Europe or in our more Northern States. So that those persons, who cannot afford the expensive pleasure of conservatories and green houses, may still enjoy the high gratification of contemplating the most beautiful exotics, and inhaling the perfume of the most fragrant and brilliant flowers of the South, growing in their own gardens, and blooming around their own homestead. Let us cherish this taste as one of the purest and best; and let me, in conclusion, exhort you to do so in the words of the Prince de Ligné, who was the companion of monarchs, and surrounded by the splendour of courts, derived his chief enjoyment from the cultivation of his garden. This enthusiastic Horticulturist says, "WOULD THAT I COULD WARM THE WHOLE WORLD WITH MY TASTE FOR GARDENING. IT APPEARS TO ME IMPOSSIBLE, THAT A BAD MAN CAN POSSESS IT. THERE IS NO VIRTUE, THAT I DO NOT IMAGINE IN HIM, WHO LOVES TO SPEAK OF AND TO MAKE GARDENS. FATHERS OF FAMILIES INSPIRE YOUR CHILDREN WITH A LOVE OF GARDENING!!

Answers to "Edisto-Island."

Beaufort, (S. C.) June, 1836.

Mr. Editor,—I pay special attention to such speculations in your magazine, as relate to the production or preparation of sea-island cotton; and shall be pleased to see the sequel promised by your correspondent "Colleton." The arguments drawn from "the Factor's books," are, I confess, of a class most persuasive with me. In the mean time, I must own, that I do not agree with your correspondent in his preference for "short planting." It seems to me that to the query put by "Edisto-Island," viz. "which is better—to plant short to the hand and manure well; or to plant largely and manure, if at all, but little?" The only appropriate answer must be something like the following—"*That* must depend altogether on the nature of your soil." The experiment quoted by

"Colleton," to shew that it is better to plant short, falls short of adequate proof. "I will take a field of three acres, (says he) the soil to be of uniform quality: one acre I will manage well, the other two I shall not manure at all. I shall plant cotton in both, give to each the same attention, and will, at the end of the season, under every circumstance, make more from the one acre manured, than from the two without any manure at all." Now this will happen just as he says, if he select the land, but not if I select it. Suppose the experiment made on pine barren, or other land incapable from exhaustion of producing cotton, and the one acre manured, will produce more than the two unmanured. But select new land, or land not new, but exhausted, and the result will be directly opposite. Practical men know, that manure applied to land already rich, gives weed, leafiness, rot: and a product inferior to that which a generous unexhausted soil will yield without manure. Take for illustration, the land on which a cowpen has been long kept. How well the cotton planted on it looks in the spring! How invariably does it fail in the latter part of the season! I have known it take seven years, to sober down land once stimulated, to the productive point. The planter, then, whose land requiring no manure, would limit his culture nevertheless, to the quantity which he was able to manure, would act as absurdly, as he would, on the other hand, who having barren or exhausted land, would plant it unmanured, merely to make up a certain quantity to the hand. Finally, the question, "whether or not it is best to plant short to the hand?" Depending ing absolutely as it does, on the character of the soil, and the means of the cultivator, is one which every planter will decide best for himself, and which he may decide very rashly when he decides for his neighbour.

My opinion is, that we have a greater number of planters who err in planting too little, than in planting too much. They are apt to follow too unreflectingly in the track of their predecessors! What is the object of the planter? To make a full crop—six hundred pounds of clean cotton to the hand! To effect this, he plants four acres (to the hand) of cotton, either in manured land, or land supposed rich enough without manure, to yield one hundred and fifty pounds, to the acre. Does the planter, under this system, reach this standard of profitable crop-

ping? Does he send his six hundred pounds per hand of sea-island to market? Let the factor's books speak for individuals! Let the aggregate of exports declare the general result. This quantity is not made year by year. The irregularities of the season, not to mention hurricanes and caterpillars, reduce the average far below this standard of profitable culture, even with those who have the best lands, and the most improved systems of culture! How then can the great majority approach this product? There are many thousand acres planted which, *with manure*, are not to be relied on for more than one hundred pounds to the acre. Shall not the cultivator of such lands, reach the six hundred pounds, by extending his culture to six acres, if he can effect it? The practicabily of tending this number of acres to the hand, is not now a matter of experiment, but an ascertained fact. It was successfully done by a planter of this district, in 1835, and is now doing in 1836. This planter cultivated two plantations, separated only by an arm of the sea. On one, where the soil was very superior, he planted *four* acres of cotton, one of corn, and one task of potatoes to the hand; assisting the corn with the plough, and working the cotton with the hoe alone. On the other, of which the soil originally good, had been much impoverished, by sixty years alternate cropping and pasturing, he planted *six* acres of cotton, one of corn, and one task of potatoes to the hand; helping the corn, as in the former case, with the plough, and running the plough or cultivator *in the cotton*, in aid of the hoe. The cultivator was soon broken by the negroes, as every new instrument that is breakable, invariably will be, and the plough alone did the auxiliary labour. The whole process, it is needless to repeat. One operation merely, to which, that desirable sight, a clean field throughout the year, was mainly to be ascribed, shall be given. The first process was a hoeing down, passing the hoe between the hills, and carving down the entire surface of the beds into the centre of the alleys. Then came the plough, throwing a furrow from each side towards the centre of the alley, smothering effectually the first crop of grass; and no other was suffered to grow. The field was clean throughout the season: and here comes the pith of the matter—the product of this plantation was nearly six hundred pounds of clean ginned cotton to the hand! While that of the unploughed, four

acre to the hand, plantation, amounted to four hundred and sixty pounds only. "But the last year was an uncommonly dry year" it will be said—"there was little grass, and the experiment that would succeed then, might fail if tried on a different season." Very true; but *this season* is wet enough in all conscience; the experiment has been tried anew, and up to this moment, (16th June,) not an acre has been thrown away; and though it would be untrue, to say there was no grass in the cotton field, there is none the proprietor is afraid of, or that abates his confidence in the opinion, that the six-acre-system, aided by the plough, when put to the test of the factor's books, will leave him less content with the result of this year's crop, than he was with the last.

Our fathers cultivated three acres and a half or four acres to the hand; and therefore, so must we! They had new land—rough land of course to manage—so have we not. They could not plough, if they would; and such was their fear of mixing the weak subsoil with the rich upper crust, that they would have shuddered at the gleam of a plough-share, as at the sight of an adder! We have outlived this prejudice: and if our purpose be, (as it should be) to increase our means, and give such profits to our agricultural labour, as will remove the very temptation to emigrate. I am convinced that we must reach this desirable result, by extending our culture, and supporting the additional labour, by a free application of the plough. True: we may in good seasons, make more than we can gather! Be it so. *That* has never hitherto been the difficulty, and when it comes, Heaven give us fortitude to bear the infliction!

This ploughing system must ultimately prevail; the high price of labour will force it into vogue; but not until planters shall observe results, and be advised by their own eyes. There are not only honest prejudices but sinister influences first to overcome. *As a general rule,** every overseer will object to it: he likes to brag of a clean field, but seldom considers the waste of labour by which that point is secured: seldom or never looks to the profit on the capital invested! Besides a small field is so much easier fenced, tended, managed throughout—his eye is so much less required—his negligencies so much easier

* There are many honourable exceptions.

covered from observation—such a stock of surplus labour is left at his disposal during the absence of the proprietor. It is easy to see that *he* has good personal reasons for objecting to the system; but the question is—are these reasons that should weigh with the proprietor?

Neither is the system of more extended planting more acceptable to certain classes among the proprietors themselves. There are some who calculate on keeping on their premises a floating capital of labour unemployed—a boat's crew for a pleasure excursion, or a lot of jobbers for what could be done as well in winter. They enjoy their hobby to be sure; but do they profitably employ the capital at their disposal? There are others who love to look at nice work, at whatever sacrifice of labour it was accomplished: rough planting is their horror. They love to figure in the gazettes—the heroes of a visiting committee of an Agricultural Society—as for example:

"*Important!*—The visiting committee of the Agricultural Society of Buzzard-roost, have just returned from their inspection of the sea-island crops, and are of opinion that they never were in a more flourishing condition. They did not particularly examine the so much boasted crop of Mr. Forecast, by reason of its unreasonable extent; but saw nothing in the very casual examination they had leisure to bestow on it, to justify the reputation awarded that planter, by buyers, bankers and factors. They saw much coarse work, some grass in ditches, and clumps of grass here and there in the alleys, apparently the work of that worrier of thin soils, and opprobium of nice husbandry—the plough! Mr. Molesight's field, on the contrary, was a perfect picture of garden culture. One acre was estimated as good for two hundred and fifty-three pounds, four ounces, of marketable cotton; one stalk examined by the microscope, was distinctly seen to have three hundred and ten forms and blossoms in embryo; and though a powerful telescope, (borrowed from the Charleston Observatory) was used by a member of the committee, not a spear of grass could be detected from one end of the field to the other.

MAXIMILIAN MITE, *Chairman.*"

I agree with your correspondent, Mr. Editor, in thinking the fine cottons more profitable than the superfine. The document from the factor's books, which he promises in support of his opinion, will be useful indeed, if

coupled with a statement from the plantation book, of the product to the acre, compared with other varieties planted the same year on equivalent soils, and with such characteristical marks of the seed denominated fine, as will distinguish it from the "Legion," that bears that name. Is it coated? Is it tufted? Is it clean? Is it Walpole's, or Edings', or Seabrook's? What name does this fine cotton bear "on change?"

Lastly—I am glad that "Colleton," supports my opinion as to the utility of ploughs in sea-island culture. He tells us that the Skimmer is used with success, and has been improved on by a respectable planter. "By this plough (he adds) twice as much work may be done, and with much more neatness, than with the hoe." From this admission, it is clear that he is not so strictly wedded to the notion of "short planting," as from the first part of his communication, we might be led to suppose; for if the *hoe* can do four acres, and the *plough* "*twice as much*," he would not surely limit the planter to the half of what he admits he can accomplish, since that would involve an expense of labour uncompensated by any return.

Health to Edings' Bay, and long life to its worthy inhabitants! To *that spot*, with its healthful breezes and fortunate location; and to *these people*, with their commendable industry, and steady application of their minds to one leading pursuit—are we more indebted for improvements in sea-island culture, than to any other spot, or people in South-Carolina. But though the seeds of improvement struggle slowly hitherward against the current of the trade winds, yet some few have settled and taken vigorous root. We too, begin to know a thing or two: we know the virtue of marsh mud: and that with rotation of manures, we may measurably dispense with rotation of crops. We know that fine seed makes fine cotton; and that the way to get 50 cents is to ask 75. We know that the *thriving members* of Agricultural Societies, are they who open their ears and eyes, and shut their mouths. Finally, we know, that *horse power* or *mule power* are very well bestowed *in a cotton field;* and when in the progress of improvement, our neighbours of Colleton, shall ascend to steam power; we promise them they shall not be many years in advance of BEAUFORT.

Note.—At page 343, line 4th, for "manage," read *manure.* Line 14, insert *un*, before "exhausted." Line 23, insert *over*, before "stimulated."

On the Working and Thinning of Cotton.

My Dear Sir,—Your repeated solicitations to send you something for your journal, have induced me to overcome my indisposition to write, and accordingly to prepare you something in the shape of an article. However, before proceeding any further, I must remind you of the fact, that this is the first time that "Old Homespun," has ventured to appear in the public prints. If, therefore, the clothing of his ideas, be not of the most fashionable texture, I am confident, that you and the public will excuse the appearance he makes, when he tells you that he does so, merely that his young friends may benefit by his publication of those facts, which long experience has taught him to be correct.

I propose, therefore, to give my notions upon the *working and thinning of cotton.*

The cotton crops are generally up about the first of May; and the corn crops have been planted. At this season, then, although I seldom have any grass in my fields, I commence hoeing. This I do, to stir and loosen the earth, in order that the roots of the young plants may expand. I consider this hoeing of incalculable advantage, but great care should be taken as to the *mode of doing it.*

In my first working, I use the hoe, principally on the sides of the bed, inclining to the top of it. Alongside of each hill of cotton, a chop or two is made, on the top of the bed, to loosen the earth about the plants. In doing this, the worker must carefully observe not to draw the dirt away, as he removes the hoe from the chop it has made, else he will leave the plant exposed. Another thing which he should be made to observe, is, *not to cut down the bed in such a manner as to form a ridge in the alleys.* If he do not observe this rule most scrupulously, he will fill up the alleys in such a manner as to prevent the rain from freely passing off when it falls. The non-observance of this rule has ruined many a crop of cotton.

The second working is generally *to haul* up the earth to the plant. This is done, by standing in one alley, and reaching over the bed with the hoe, and drawing up to the plant, the earth, which, in the first working he had loosened in the opposite alley. The object of hauling up

is twofold—first, to kill and to cover the grass; and second, in gathering the earth around the plant, to give it moisture, and consequently a start in growth. In the second working, I thin down the plants to *four*, *five* or *six*, in proportion to the strength of growth, &c.

The third working is done precisely as the second, and in this working, I thin the plants down to *two* or *three* in each hill, as circumstances may require.

In the fourth working, which takes place about the middle of June, I thin down the plants to two in a hill, which at the rate of 60 or 65 hills on a task row (105 feet) leaves us from 120 to 130 plants to each row.

These workings having been gone through, the consideration next arises—"are the beds sufficiently large; or are they likely to be washed down by the late rains?" If either is the case, I haul up the bed—if otherwise, I hoe, taking care, at the same time, to keep up the original size of the bed, by hoeing up to the top of the same in an oblique direction, from the alleys. This operation is, by some planters, called "*side hauling*."

The crop being thinned down as described, my most careful and sensible hands are now selected to thin. These are sent over the crop, and whenever a growth of six or seven feet is expected, they are instructed to leave but one plant in each hill. Where the growth is expected to be from only four to five feet, they are instructed to leave from ninety to one hundred plants in the task row; and the poorest land from 120 to 130.

After the *fourth working*, the cotton need not be worked, except where the plant is low, and wants hauling up to give it growth. The plant when well grown, is apt to be bruised and injured by being worked—the tops and arms of the plant are likely to be broken; and in many other respects it receives more injury than service.

I have thus, circumstantially described the *working* and *thinning* of cotton, because, Mr. Editor, many years experience has taught me that it is the most important consideration in the whole process of cotton planting. Not to understand it correctly, is to the young planter a loss of one half of his yearly interest.

In concluding this article, I will recapitulate what I have said in the form of a few maxims for the young planter.

1st Working, keep your field at an early period clear of grass—loosen the earth about the plant—thin your cotton moderately, and keep your alleys clean and open.

2d Working—haul the earth up to the plant, thin them, down to *four* or *five*, and otherwise observe the same rules as in working the first.

3d and 4th Workings—continue to haul and thin down the plants to the number required; and never at any one period suffer water to remain upon your field. If you have too much water in the first growth of your cotton, it will render it backward, by rendering it too cold, and if you suffer it to remain upon the land when the plants begin to blossom and pod you may invariably calculate on loosing one-half of your fruit.

I remain, Mr. Editor, your friend and well wisher.

OLD HOMESPUN.

Advantages of increasing Slip Potatoes.

Mr. Editor,—As the excessive rains and freshets in almost every part of the United States, have injured the crops of provisions, we must expect a further increase in the present high prices of every article of food. It, therefore, becomes a duty with every planter in South-Carolina, to take advantage of the present of opportunity and increase his crop of slip potatoes.

I was told by a very experienced planter, that he had greatly increased the quantity of slip potatoes produced to the acre, by simply chopping through the vines with a hoe, across the bed, about midway between each set of sprouts, as the slips had taken good root. I believe this to be true, as it would cause the slips to throw off from each divided end, numerous small roots all bearing potatoes, instead of expending their strength in spreading vines on the surface of the earth.

I request that the experiment may be tried, and the result communicated through your useful journal.

Z.

Agricultural Education.

In one of our past numbers of this journal, we intimated an intention of preparing a series of essays on the subject of Agricultural Education. Though long delayed, the pledge has not escaped our memory, and we have been anxious, on more than one occasion before, to undertake and fulfil it. Our journal, however, has been well occupied with other matter, and whatever may have been our desire upon this point, we have not had, until now, the necessary opportunity for the execution of our task. The time has come, however, when we may make our promise good, and we proceed accordingly to a consideration of the subject, under the four following heads:—

1. The present and defective character of Agricultural Education in South-Carolina.
2. The causes to which its defects are attributable.
3. The probable remedies for such defects, and
4. By whom such defects are remediable.

Our views on these topics must necessarily be discursive. They present too large a surface for very ready and effective concentration, and if we glimpse at them only, as they severally come up before our minds, it is quite as much, as, in reason, we may be expected to do.

South-Carolina, from its first settlement as a French, and subsequently, as an English province, has been essentially and almost entirely agricultural. The laws of nature imperatively made her so. The spontaneous and liberal productions of the soil, designated to the most ignorant mind the purposes for which she seemed to have been intended; and the Indian, when our ancestors first discovered the banks of May River and Port Royal, was accustomed to plant his two grains of maize in one spot, precisely as our planters do at the present moment.* Her resources from the first, seemed to be entirely those of agriculture and the chase. In all the usual objects of Spanish and French adventure, she seemed utterly wanting. Gold and silver seldom rewarded the greedy European who sought it on her borders; and the only gifts of the savages to their strange visiters, were their baskets of grain, and the free bounty of fruits and

* See Laudonniere's Voyages.

flowers. Laudonniere, the French explorer, was not unmindful of these things. Instead of doing as the Spanish would have done, and as they were in the constant habit of doing with the Indians, marching upon and burning their towns, and murdering the simple people for their scorched pearls and flattened breastplates of gold, he planted his little colony alongside of them, and set his men to labour in a like pursuit.* He may be said, however imperfectly, to have commenced our agricultural history; though it may be somewhat mortifying to us to discover that we have not greatly improved upon the current plans of that period, in planting, even to this very day. Nature has continued to be abundant, and we have been content to receive her gifts, very much as the savage did then, without requiting her for them. She has spared us one necessity in disarming or providing for all the rest—that of taking care of ourselves.

Such have been her gifts, and such always has been the prolific abundance of our soil and State. Our prosperity has been derived entirely from our agriculture, imperfect as it has ever been; and without any visible improvement in our arts of management, labour, or experiment, we have presented, through the agency of a productive and generous soil and atmosphere, the appearance of a people which has always continued to improve. All of our interests, whether they affect our gain, our society, our politics, local or foreign take their complexion from our agricultural pursuits, and are prompted by them. All professions in our country are moved by those of the planter. In his success, they succeed—in his losses they suffer. In his fate, the fortunes of merchant and mechanic, lawyer and doctor, freeman and slave, have their governing principle, and his importance is to be estimated by their dependance upon him, not less than by his own individual character and influence in the community. His successes determining, in great measure theirs, does it not follow that in proportion as he is weak or enlightened, they will falter or succeed. In proportion as he is intelligent and industrious, will be

* The narrative is quite an interesting one which describes the mutiny of his men, who desired to explore the neighbouring places for gold, preferring piracy and robbery to the wholesome cultivation of the fields. They stole his boats and made away with them, but were punished in the end. The ringleaders were caught afterwards, and hung by him.

their hopes of fortune, and their capacity for enterprise. In proportion as he is skilful and reflective, will be their skill, their reflection, their readiness for adventure, their elevation of pursuit and character—their virtue and their patriotism. The intimate connexion and close dependance of all pursuits upon those of agriculture, are happily comprised by Lord Bacon in a simple and brief sentence, in which he sums up the whole history of national prosperity: "There are three things," says he, "which one nation selleth to another—the commodity as it is yielded by nature, the manufacture, and the *vecture* or carriage; so," says he, "if the three wheels go, wealth will flow in as a spring tide." He places the three things in their proper order. The planter first, the manufacturer next, the shipper third; and the sentence might very well be stuck over the door of every cotton and counting house in the country.* But there is yet a greater than planter, manufacturer and shipper, whom Bacon has not classified with the rest. He must be set before them all. He is *Labour*—a huge, heavy handed giant, striking like a blind Cyclops, imperfectly and uselessly, until Art, a gift from Heaven, which should be protected, if not worshipped by man, comes to his aid, and directs his efforts, and makes him equally important to agriculture, to mechanics, and to commerce. Through him they all triumph, without him not one of them could succeed.

We have labour—has art duly prompted and directed his industry? This is the question. Surely, these are truths—undeniable truths—which we have been uttering. Have our people learned them—do they believe them—have they adopted, and do they toil in obedience to the precepts which they teach? How far has South-Carolina recognized, and how closely has she practised upon them? Let us ask the question. Let us look into the truth.

* The words of Bacon have been rhymed as follows:

"Let the earth have cultivation,
Let its products have creation,
Bid the seas give circulation,
And you build the mighty nation."

And yet, unless you give the people education, they would be knocking out one another's brains with their own working implements.

It is humiliating to know that we have made no such inquiries—we have been too regardless of these truths. Not sufficiently content with the bounty of providence to forbear complaint, we have yet been too well satisfied with what she has given us, to have laboured at improvement. We have left undone a thousand things which should have been done, and we need not wonder, if there should come a time, when the wholesome truth comes home to us, and the stern rebuke of heaven places our present diminution of the goods of fortune to our own account; charging us with a neglect of our proper duties of self-instruction and self-devotion to our own and the general interest of the country. Look back at our agricultural history and enterprise, and how gross are its defects. What have we learnt—what do we know? Where are we now? Are we a solitary year in advance of the first settlers in the matter of Agricultural Education. We fear not. What are our improvements; and what is the estimate which we are accustomed even now to put upon agricultural knowledge? Is it not regarded as the merest matter of common place industry and effort, which calls for an overseer, not a guide—a spy rather than a teacher; which needs no art to prune, no precaution to provide against the vicissitudes of the seasons, no reflection to devise new improvements, or convert into proper channels, the well known and the old? Is not such the estimate commonly put upon agriculture —the very first of the arts—mingling the necessary with the useful, the useful with the grateful, the grateful with the elegant, the elegant with all others? There are very few persons who consider it a profession, requiring any intellectual exercise whatever, and, compared with its sister arts, we may venture to affirm, that, although the very highest in importance, it is yet the very lowest in point of rank. True, we honour the planter as one who is a good citizen—who has wealth and the influence which wealth produces—who is frank in his intercourse with men—who is hospitable to the stranger, and who gives to our society a character and temper, which we would not willingly see exchanged for any other. But, there is little more. When we have said this, and said in addition—he cultivates so many acres, owns so many slaves, hunts as fearlessly as Nimrod, drinks of the best wines that the Champaignes of France produce, as deep-

ly as Mynheer Van Dunk, and with as perfect impunity —that he entertains his friends with a grace that even gives a charm to his entertainment—lives up to his income, yet keeps out of debt; travels like a prince, and never challenges the bill—when we have said all this, we have said all. His virtues and vices, his toils and his pleasures are, alike, set down, and the Agricultural Society may foot them up at pleasure. To him it matters not much what is the precise character of the soil which he cultivates—he asks not the history, he observes not the constitution of the plant from which comes all his revenue. It is not his concern upon what principle of mechanics his workmen, his horses, mules and oxen, apply their labour; nor does he deem it his part to know by what particular tenure he holds his lands—or upon what great principle, his rights, as a citizen, are maintained. He is too apt to avoid all trouble and concern on these topics. Public opinion expects from him no knowledge on any of them, and he may live in total ignorance of the whole history of his own country, past and present, yet, in no wise offend the judgment of those who move around him. Let him but pay his taxes, he may vote—let him but speak civilly, he is a good citizen —let him but show a wholesome warmth on the subject of his public relations, he is quite as pure a patriot as any in the republic.

Nor, in public and national respects only, may he live in utter ignorance, and live without offending popular opinion. Contract the sphere of your observation, and see him at home. He may be totally uninformed of those matters which more immediately pertain to his own plantation and its government—sometimes, indeed, he may be even found to despise them, as unbecoming in him to notice, or unworthy of his esteem. And this course of conduct, though in such exceeding bad taste, would call for no rebuke from the general feeling, and would, indeed, rather accord with, than revolt, the public opinion. We are somehow strangely given to regard all labours which employ time, and compel exertion as inconsistent with a proper gentility. Noble blood will not trade in merchandize—can it be expected that noble blood will sow and reap, and devise modes and means by which the arts of sowing and reaping shall be strengthened and improved? There must be a revolution in our thoughts, in our habits

of thinking, before we can hope for improvement. Our planter, himself, must make a change—he must not wait for the spirit of enlightenment—he must go forth and seek it. Public opinion must keep pace, and go with him in such a pursuit, for, whatever may be the achievements of the individual, he will inevitably fall back into old lethargies, unless supported and stimulated by the belief that the world around goes with him—that all are stirring in the same fields, and that if he does not push forward inflexibly, fearlessly, thoughtfully, he will be left behind in the grand march of enterprize, alone,—stagnating and stiffening—where he stands.

The exertion must come from the planter and the planter only. The movement of other craftsmen will never move him. He must move himself. With us, he is the man who gives the tone to public sentiment. Why? He is the great proprietor known to the country. The capital of our State exists in the soil, and the serfs who work it. They are his. He wields that capital, and that capital makes our feelings, our opinions, our character. To plant is to engage in the highest craft known to our people. It is the object of ambition with all. It would not be so if the influence of the planter were an iota less in business and society.

How does he employ this influence? Let him ask himself the question. Could he make it greater—could he employ it in making a better population among our inferior classes, and what should be the aim of the moral man in his direction of the vast moral power which he certainly may wield over our society, and through it over our institutions? There are other questions which it may serve him beneficially honestly to analyze, and justly to resolve upon. Why is his influence less now, than what, under a proper direction of his energies and thoughts, it might become? The evil and the error is with him. He has himself to blame—none other. The man who places a low estimate upon his own pursuits, cannot surely complain that others receive him at his own valuation. He has suffered the mechanic to regard his craft with more respect, and to direct more of heart and mind to the promotion of it, until, he learns to love the toil which gives him strength and power. You may see the mechanic with his badges of plane or hammer upon his apron—you will never see the plough drawn upon the panel of a plan-

ter's coach. He boasts of his negroes and his hands. Does he take up the hoe and the plough himself—does he regard them, as such old and long tried friends might well be regarded, with respectful veneration? We fear not. He will avoid the subject, and is sometimes apt to disparage it. He has not availed himself of that beneficial and blessing Providence, which has given him a mind able to direct the sinews of labour—he has suffered it to lie waste and fallow, until, through neglect, it has grown as bald and barren as the soil which he has impoverished by the opposite extreme of too much use. Had he used the soil less, and the mind more, and used both of them differently, they had, both of them, been more valuable at this moment. It is truly melancholy to think that these are truths which we are writing. It is sad that the planter—he who owns three-fourths of the States' wealth, and all of its political power—who pays more than one-half of its revenue—should be at the same time of so little real public importance. Why will he not consider these things. Why permit the subject to remain uninvestigated. Why not provide a noble answer, in a new design of a proper and masculine exertion?

We shall now seek to shew that this degrading condition of things has arisen necessarily from the defective character of our Agricultural Education—if that can be styled education which fits our people for any thing but what they are to become, and any pursuit but the one which most directly lies before them.

What is the education of our young planter—or rather, what is the education of him who is to become a planter? Is it ever adapted to the end in view—is it ever calculated for his pursuit? Is it not radically defective, as it lacks all connexion with the pursuits of his future life, and as it is rather apt to lead his thoughts away from a consideration of it into far and foreign channels.

Let us take an example. There is a planter whose resources are such as will enable him to give his children, what is styled, by a frank republican courtesy, a liberal education. The boy, as soon as he is old enough, is bundled off to school. The neighbouring city receives him, and from the hands of indulgent but watchful parents, he is transferred to the always uncertain care, and the doubtful management of strangers. He goes to be schooled—not with reference to his pursuit as a future agriculturist,

but simply with reference to his importance as the son of a wealthy planter. The distinction is wonderful between the education which a poor and a rich boy receives in the world, at school and out of it, when the difference of their condition is known to those about them. It is frequently ruinous to the one—it is often a blessing to the other; but the vanity of a parent would be apt to insist that his son should be treated with reference to his own importance, and this vanity blinds him usually to the true interests of the boy. The son, himself, very soon learns to exact rigorously the deference commanded by his father's income; and under circumstances such as these, his education—that course of preparation, which is to bring his native mind into activity, inform it with all necessary and existing knowledge, and counsel it for the labour which in future life it is to take, and the patterns and purposes which his pursuits will require him to adopt—under these circumstances, which prompt self-conceit, stubbornness, and a total want of all method—his education is begun.* He goes to the city, and, in most cases, is suffered to choose his own lodging house, his guardian, and his associates. His caprices take the place of the experience of others, and his first lessons of obedience are fully begun by his having his own way at the beginning. He attends a regular, or, not unfrequently, an irregular teacher, and is himself a most irregular pupil. He goes through his recitations or not, and as his parent does not often examine, he is not often dissatisfied with the reports of son and tutor. The teacher does not often inquire what shall be the pursuit and profession of the youth. Indeed, he is not often permitted to do so. Nothing can be more arbitrary or so little adapted to the wants or capacity of the boy, as the course of instruction which he is put upon. He is required to conjugate Greek and Latin verbs, and a passing glimpse at Greek roots, is all that is ever taught of roots at all to the future agriculturist. He manages, by dint of *driving*, *drilling*, and possibly occasional *dressing*, (all of these italicized words to be used in the technical, school, and not in a plantation, sense) to make his way after a lapse of years into and through the easier authors of antiquity. Without appreciating any of their beauties, and

* Refer to Gillies' Greece for an excellent summary of the Laconian methods of education.

in half the number of cases without comprehending their meaning, he proposes to be, and is, by the courtesy of Professors, ready for admission into college. College! That mysterious institution which is to convert the block into the classical shapes of ancient models, and imbue the tough and insensate clay with the creative fires of Prometheus. By this time his moral faculties have all become admirably fitted for his admission into walls so sacred. He is free to licentiousness. Rudeness is manliness—obtrusiveness, proper spirit, and violence the only genuine show of high mindedness and a glorious southern fervour. With no parental eye to watch over, to guard his education—his morals and his manners are alike the creatures of his sudden and froward impulses. He has no master but these last—he has no motive but the indulgence of his long unbridled passions. From college, if not expelled for turbulence and brutality, he passes on to graduation. His education is complete, and he may now choose from all the professions which surround and invite him. Nobody can doubt that he will succeed admirably as a Divine, a Doctor, or a Lawyer—fewer still are there who will venture to deny that he will make a first rate Agriculturist. He, himself, has no doubt upon the subject. He can chop logic with his master, discuss all manner of subjects, quote an occasional passage in the Greek and Latin, blunder over Euclid, and moderately fracture the head of Priscian. He is prepared for life and all its purposes. He is ready to encounter its vicissitudes—his ambition, which is boundless, gives him daring enough to engage in any vocation, and he begins the world, perfectly well educated after the fashion of the time, and destined to add another to the long generations before him, which have lived and died, and left no sign at their departure. He can do nothing for the craft which he adopts—it must degenerate in his hands. He cannot raise his caste—he may impair and possibly degrade it. His country derives no good from his patriotism—an education like his makes an egotist only. Society suffers in his connexion, for he subjects it to his caprices.

The cause of this is obvious enough, if we would but see. His education, faulty in all respects, is entirely and doubly so, as it has had no manner of reference to his possible pursuit in life. From the beginning he has been toiling in the dark. Through the whole course of his

tuition, though his tutor has probably never forgotten that he was the son of a planter, he has probably never kept the fact in mind that the boy was to become a planter also. Agriculture, its condition, its elements, its instruments, its uses, and connexion with all other topics, has never been insisted upon. It was the very last subject, indeed, which he was likely to hear of at school. If his own mind from previous bias and association, exhibited any tendency towards the subject, he would in all probability find himself discouraged from any investigation of its principles, and among his city mates, his chance would be great, if he showed any large disposition that way, of being laughed at, for what they would be apt to call his inflexible rusticity. When he assumes the robes of manhood and begins to look about him—confident as he has been before about the universality of his genius he now begins to have misgivings. He is a planter, and he is called upon to apply his education to his business. What a discovery is that which shews him, not merely the utterly unprofitable character of his education hitherto, but shews him that he is to begin anew—that now, for the first time, he is really to commence his schooling. What connexion had his college education with agriculture—how did it expound its laws—how, explain its principles—how, illustrate its practices and unfold its history? He is now to commence with the elements of his education, when he is engaged in the more serious business of his life. Its doubts and difficulties are all before him, yet he has now to prepare himself for that field of enterprize, in which the self-taught adventurer is already reaping wealth, and establishing character.

But we must give way to other matter, and leave our disquisition over to another day.

PART II.

SELECTIONS.

On the Manner and Time of Employing Overseers.

[FROM THE FARMERS' REGISTER.]

Saratoga, (Buckingham) February 2, 1836.

As I have just forwarded my subscription for the third volume of your Farmers' Register, and not having heretofore given other evidence of the high estimation in which I in common with very many of my acquaintances in this part of the State hold that work, I will now indulge in a few remarks. Being a plain sailing farmer, I have not the disposition to attempt any laboured criticism on the merits of the work, or the inclination to indulge in any inflated or ill-timed commendation. I dare say, it will be generally conceded, that, that person renders a more acceptable service, who when he beholds his fellow-man struggling against the difficulties which may surround him, freely contributes his mite to free him from embarrassments, than the individual who seeing the unpromising state of affairs, stands aloft either to detect and magnify blunders, or to cry huzza for those who so nobly combat for the amelioration of the human family, and the advancement of the great fundamental interest of the republic. Without farther preface, I will proceed to place before you, my reflections upon the important subject of having men of information and intelligence, as well as of practical skill to act as overseers—and also, on the expediency of the proprietors of estates entering into a general determination to change the time of employing, or making contracts with their overseers.

I think but few men of observation will deny, that one great cause of the very wretched state of agriculture in the middle section of Virginia, is owing to so large a portion of it being not only entrusted to men of limited acquirements and moderate capacities, but to those also whose interest it is, to aim almost exclusively at present gain, without regard to future consequences. We all know that it is the due combination of knowledge and practical skill, which enables particular individuals to achieve those objects calculated to better our condition; and, that requisitions are as frequently made on the arts and sciences in accomplishing agricultural improvements, as elsewhere. Notwithstanding this fact, and the circumstance of other avocations requiring long study and many years of apprenticeship before they are mastered, it is but too frequently the current belief, that all that is wanting in the farming department, to entitle any one to a decent stand

ing, is to know how his father or grandfather used to manage their farms—and to be able to condemn indiscriminately all innovations on old practices, and stubbornly refuse to borrow light from other neighhoods or communities.

It is also too prevalent a fashion among practical men to repudiate all agricultural knowledge derived from books, which is about as wise as the conduct of our farmers learned in the sciences, in eschewing the means of acquiring practical skill. The former throws aside books in accomplishing their agricultural operations, and the latter equally as sagaciously, attempt to be practical farmers solely reading books, devising new theories, and figuring upon paper. It must be conceded however, that agricultural books in the hands of the really ignorant, are rather a disadvantage, for inasmuch as they only know the common rules practised by their forefathers, without having hardly examined the principles upon which they were based, or the particular circumstances which rendered them expedient; they can hardly be supposed capable of understanding the principles of any new subject connected with agriculture, or of possessing capacity sufficient to enable them to modify new rules or plans so as to suit their particular situation. For somewhat similar reasons, it follows, that pure theoretical men would be about as much benefited in having a farm to experiment upon. Then it seems, that the great desideratum necessary to ensure successful farming, is to possess so large a share of information and intelligence, as will enable any one to see what is going on around him, through a proper medium, and to determine, upon proper principles, the fitness and utility of things, while at the same time he has the practical skill successfully to turn the experience and plans of others to his own benefit, whenever in his judgment it may be advisable. Surely one of the highest points for any farmer to attain, is at all times to be able to grasp and wield the knowledge of others. We have frequently seen the immense difference between the judicious and injudicious application of both capital and labour even in the most common pursuits. While witnessing such occurrences, we cannot help being forcibly struck with the incomparable advantages, the well informed must possess over those who rely entirely upon their mother-wit. As for instance, in the case of the farmer who ploughs shallow, and then plants his corn with the rows running directly across his field—and up and down hills and ravines. The consequence is a bad crop, and the land also materially damaged by washing rains, and probably made so ridgy by improper cultivation, as to make it almost impossible to put the small grain in properly—and even after the small grain is removed, the land is apt in such cases to wash out where the middle of the corn rows were. So we find bad management in one case necessarily counteracting the next two or three efforts at good management, and preventing not only the fair returns from the land, but leaving it exposed to injury for years. I heard it remarked once, by a farmer, that he considered the difference between selling a barrel of corn for $5, and purchasing one barrel at that price for the use of the plantation, was equal to $10 in the purse of the farmer. Upon this principle the difference between good and bad management is much greater than is generally believed.

If gentlemen had their fuds vested in other property than land and negroes, they would be for getting clever and sensible men to manage and superintend them, but as long as their capital is in a farm, &c., they seem to imagine that any dolt can see to feeding the cattle, work-

ing the ground, and whipping the negroes. and that it would be somewhat indecent for the proprietor to do any thing farther than pay taxes, pocket what little is made, and play the gentleman. This doctrine suits the taste of many individuals, and might be commendable were it not for the impoverishing effect it has on the purse, and the still greater injury it inflicts on the husbandry of the State. Agriculture, like other occupations, requires a willing and energetic hand to execute, and a sound and clear head to direct its various concerns, to render it either agreeable or profitable. The wish, very frequently, of getting overseers at low wages, induces many farmers to forego other considerations of vastly greater importance. What would be thought, for instance, of an undertaker of some public-building, who first having procured at great cost the best materials for construct his work, would then run the risk, by employing an inferior mechanic for some $50 or $100 less than he could have engaged a good one for, of not only having an illy shaped, badly proportioned house put up, but also the hazard of spoiling or destroying all the fine materials that were prepared for the building? As injudicious, (to use the mildest term,) as such conduct would be, yet the farmers are frequently guilty of the like error. It needs no argument to prove how much injury such conduct has imposed on this State. If a man goes to the expense of getting a good farm, good slaves, good stock, &c., why surely he ought to be very particular in getting an overseer possessing all the requisites profitably to manage them. An error in that case not only prevents the annual proceeds from being what they should be, but the capital employed deteriorates, and blunders are made, which generally cost much labour and pains to counteract. In the general, we rarely, if ever, repent giving a good price for a good overseer, but frequently in our moments of repentence we would cheerfully have given three times the amount, rather than have had a bad manager. True economy therefore requires in this case, that we should look more to the overseer's ability to manage our matters profitably, than to the few extra dollars he may demand for his services. I hope I shall not be deemed an advocate of high wages, except as a contingent consideration. I have thought that a farmer who had property to the amount of $20,000 or $30,000 had better give a good manager two prices, or nearly that, for his services, than a bad one, half wages. That scientific or judicious agriculturists would in the main be decided gainers by pursuing the preceding suggestions, I see not the least good reason to doubt; and I think there is still less cause to suppose that the young or inexperienced farmers would be injured by doing likewise. To question the justness of the above remarks, would be tantamount, to maintaining, that a dull razor would shave as well as a sharp one, or that poor land would produce as much as rich.

But few subjects are more deserving of the consideration of the farmers and planters, than the present method of employing overseers. It is the general custom so far as my observation extends for overseers to be busily engaged in renewing their contracts with their old employers, or in hunting out new situations in the months of May, June and July—some few only deferring it till August.

The bad effects of this custom ought after a little reflection to be so apparent to all, as to create a general wish to produce a change. A gentleman employs a "new overseer," he takes place on the farm in November—makes a great effort to put his business forward—forces his teams and hands improperly—works the ground out of order, and

in the general does but little work in the way work ought to be done. As the spring approaches he must try and be the first to finish planting corn, seeding oats, making tobacco hills, planting his tobacco crop, &c., and for what? Why, if he is forward in the spring—has a great deal of work done—and dashes about to this and that place in a great hurry, he soon gets the credit of being a "tip-top" overseer, which is the consummation in his estimation most devoutly to be wished for. Frequently it happens the overseer makes preparation for too large a crop, which of course is injudicious, as well as is liable to be badly done, or in his great anxiety to be foremost, half prepares the proper quantity. However, all this is not to him a matter of much moment. For he has probably a large family dependent upon his exertions, and his employer is independent, therefore he concludes it is proper for charity to commence at home, so he looks only to his own interest. Under this conviction he very naturally takes those steps that will tend the soonest to increase his wages. If the tests of merit rest upon an improper basis, why he says to himself "if the other overseers are weighed by them, and the employers think them sufficient, I too had just as well give into the fashion," therefore he exerts himself to acquire those characteristics deemed important. The time for contracting being at hand, the parties unfortunately cannot agree about the terms for the ensuing year. Well! away goes the overseer on horse-back, in the most important part of the year, riding here and yonder in quest of a new home. In the mean time the employer and his business are all very unceremoniously left in the lurch, till the redoubtable character can procure a place. Some days and frequently weeks being passed off in this way, the overseer then returns to his post, and finds every thing in confusion. Grass growing—crops suffering for work—and employer vexed. As one might expect, the overseer finds there is more work to be done, than he can well have done. The crop soon begins to fail—some of the stock are killed up—the negroes badly treated—and at the end of the year, it turns out there has been much ado about nothing. The employer, if young, quickly concludes farming a poor business, and if old, is apt to turn his overseer off—undergo a great deal of fatigue, or get some lad to attend to his affairs in his stead.

The custom of making bargains with overseers in the months of May, June and July, holds out as can be easily proven sundry inducements for rash and injudicious management in the commencement of the year, and but too frequently gives room for neglect, waste, and general bad management for the remainder of the year. It puts it in the power of indifferent managers to compete more successfully with the really good, in obtaining business. It has the tendency to induce people to form their estimates for the management of men, by their spring and winter's work mainly. It furnishes pretexts for neglect of business at the most important season of the year. It prevents the employer from forming a correct opinion of the qualifications of the overseer previously to renewing the contract for the second year, because that cannot well be determined till the crop is quite or nearly finished.

To obviate all these difficulties, the planters and farmers need only come to a determination of not making contracts with their overseers, except in the months of November and December; and of fixing the moving day between the fifteenth of December and the first of January.

Upon a little reflection it seems to me that most people will perceive the benefits that would result from this change. It would be one in my opinion not only eminently beneficial to the farmers, but to the good overseers also—for merit when ascertained is most sure to be rewarded. When we employ a man to do any thing for us, we generally like to see how he executes before we give him additional work to do. Now this can only be done in this case by giving the overseers one year's trial, and then having ascertained their merits, we can with propriety continue or discontinue our contracts. By deferring the time of contracting, they will be induced to continue their exertions to give satisfaction and to gain reputation. And as the crop made, would be the test of their fitness, they would take more pains properly to prepare the ground, cultivate the crop, and to save it. The good managers would see that a display of skill and industry would be placed on its proper footing, and entitle them to higher consideration, and the bad managers for fear of not only being thrown in the rear, but of being left in the lurch, would also make greater exertions. The time could better be spared in November and December to look out business, than at any other time of the year. The overseers could then see all of their grain crops secured. The farmers could tell better what they could afford to give as wages, and the last of December would be the most suitable time for moving for various considerations, which it is not material to mention at this time.

I am sure if this plan were adopted, we should have fewer overseers trifling about in the summer and fall, and fewer turned off. And as they would be stimulated to more industrious habits, we should have more good overseers, and the more good managers we have, the better for the country. This plan would obviate the necessity the farmers are under to a great extent at present of making the two first contracts with their overseers upon the recommendations of other men. It is nothing more than fair and proper that the farmers should not be forced to take an overseer but one year on trial—but according to the present custom, we are virtually forced in many instances to engage them for the two first years, before we have had an opportunity to judge of their qualifications.

In conclusion, it is proper to state, that it is not my intention to lay all the blame to the overseers, or because some are worthless, on that account, to disparage all of them. Like all other trades or professions, among them there are some that would do credit to any cause, while there are others of great inferiority. That there are many honourable, intelligent, and deserving men among them, as well as skillful farmers, I do not queston or deny.

Whether or not these hints are worthy of public consideration, I leave it for others to determine. Certainly many expedients will have to be essayed, and great skill be required in working out the various means designed to resuscitate our husbandry. But that every effort may aid in achieving that great and desirable object, and hasten the period when this our native land shall again "blossom as the rose" must be the cardinal wish of us all.

EDMUND W. HUBARD.

Rules to be observed in the Management of Live Stock—the manner of nursing Calves.

[FROM THE GENESEE FARMER.]

To My Son,—Although it is believed the suggestions contained in my last letter are worthy of your attention, consideration and practical regard, yet I have little expectation that they will be responded to, either by yourself or your fellow-citizens, in the manner which would be most pleasing to me. It is hard to persuade farmers to alter the course of their proceedings. That American farmers have it in their power to improve their course of husbandry surprisingly, by introducing the best breeds of European stock, I have not the least doubt. Could you obtain for use in your neighbourhood a fine bullock of the improved Durham Short Horned breed, although it were but half blooded, it would be a valuable acquisition to the husbandry of that place. It appears to me, the peculiar fitness of your soil for the husbandry of live stock, furnishes a reason wherefore you and your fellow-citizens should set your aims high in regard to that object. But I will dismiss this subject. It is possible that I have urged the introduction of foreign breeds beyond what its importance requires.

If you cannot obtain the improved breeds of other countries, or if that should not be thought advisable, then make the best use you can of our own native breeds. There are among the breeds of our own country very many fine animals, and these breeds are susceptible of improvement, perhaps to an indefinite extent. It is believed the principal dairies in the country have hitherto been composed chiefly, if not altogether, of native stock. By taking suitable care at first to make judicious selections of animals, and afterwards to perpetuate and improve their good properties, husbandmen may, in a short time, avail themselves of such home-bred animals as will be highly respectable and profitable. In relation to such cases, the suggestions contained in my last letter, relative to employing only the best animals for propagation, will be highly important. It will be important too to exercise much sound judgment and discretion in selecting calves that are intended to be kept and raised. None but the best, or at least none but such as appear to be well bred, healthy, and of good form, should be selected for that use. All such as are under size, feeble, ill shapen, or in any respect unpromising, should be turned over to the butcher, or otherwise disposed of.

There are, in connexion with the husbandry of live stock, other precautionary prudences which are very necessary, but are not in general regarded according to their importance. One is, not to undertake to keep too much stock. This is a very common error, and it is one from which serious injuries frequently result. It should be considered that the value of live stock depends much less on its numerical amount, than on the quality of the animals which compose it. Animals, in order to be rendered profitable, must be well fed. The only proper and profitable method of keeping any sort of live stock, is to keep every animal, from the time of its birth onwards, and at all seasons of the year, in perfectly good order, and in a thriving condition. Care then should be taken not to keep more stock than can be kept in this manner.

In order to guard against the evils resulting from having more stock than the means of keeping are sufficient to sustain, much good judgment and prudent forecast should be exercised in apportioning the amount of stock to the means provided for keeping the animals. In the spring, the husbandman who keeps stock should consider and inquire how many acres of grazing ground he has at his disposal, and what number of such animals as he intends to keep that will be likely to supply with pasture. In the fall, he should make similar inquiries relative to the quantity of hay, and other fodder which he has provided for wintering his stock. How many tons of hay has he in store. If roots, straw. stalks, and other articles of coarse fodder are to be used, then let him inquire how great is the quantity of hay may they be supposed to be equivalent. These should be the first inquiriries, and then another should follow: What amount of stock is it likely these provisions will be sufficient to keep through the winter? When these questions are settled, the rule always should be, to keep a smaller number of animals than it is supposed the means of keeping might, under favourable circumstances, be sufficient to sustain. The remark which I am now about to make is, in my view, of more than ordinary importance, and I desire you to regard it accordingly. The remark is, that from being under-stocked, injuries rarely result; and if they do, they are generally small and trifling; but to be overstocked is always disastrous. It is far better to be able to sell half a dozen tons of hay in the spring than to starve your stock through the winter, and after all, be obliged to buy even the smallest quantity. It should be considered too, that close grazing in the summer injures pasture, and scanty feeding, either in summer or winter, ruins the stock.

In order to be able to make judicious apportionments, according to the preceding suggestions, it is very necessary to know, as nearly as practicable, how much pasture, and what quantity of hay and other keeping, will be required to keep any given amount of stock through a year. Should it be inquired how much pasture, and what quantity of hay are usually required to keep a horse, or an ox, or a cow, through a year, it is believed very few farmers would be able to answer the question. It would be well for farmers to ascertain themselves, much more than they do, to make accurate observations, in regard to these and many other things. I do not claim to be master of the subject to which I am now calling your attention, nor can I suppose that the idea of infallibility should be attached to the estimates which I am about to submit. From the best lights that have been spread before me, I am led to conclude, that when hay alone is depended on, it usually requires two tons of hay to winter a horse—for one ox about as much—for a cow one and a half ton—for twelve sheep the same as for a cow. It is believed, that for summering either a horse or an ox, at least three acres of good pasture, or an equivalent thereto, will be required. For summering a cow, two and a half acres may suffice—the same for summering twelve sheep.

To the cattle breeder, few things are more important than to know the best manner of nursing and rearing calves. I have taken some pains to avail myself of lights on this subject, in which I have not been altogether unsuccessful, nor yet successful to the extent of my desires and expectations. It is I believe, generally conceded, that the ancient practice of letting calves suck their dams is not the best, and so far as I know, the practice is generally discontinued. For several

reasons which cannot be explained in this letter, it is supposed to be better to take them off at a very early age, and having learned them to drink milk, feed them with that article till they are old enough to be weaned. Yet if new milk is the article of food chiefly depended on, the expense of nursing calves in this way is scarcely less than when they are allowed to suck, and it amounts to a considerable item. For this reason it has long since been considered as a desideratum to devise some less expensive and equally successful way of nursing calves. I am glad to say, there is good reason to believe this has been done.

Several correspondents of the Genesee Farmer have published in that journal the details of their successful practice in nursing calves on skimmed milk, and without the use of any other. Whey has been used for the same purpose, and it is said with perfectly good success. When either skimmed milk or whey is to be used as an article of food for calves, the practice is, in the first place, to warm it to about the temperature of new milk. Boiling it, and afterwards letting it cool down to that temperature, it said to be better. This being done, the next process is, to mix it with a small quantity of meal. It may be Indian meal, or it may be fine bran, or meal made of oats or barley. As preventives of disease, and preservatives of good health in the young animals, it is recommended to make frequently small additions to their food of such articles as are known to be useful for such purposes. Particularly, flax seed is recommended for that use. This, it is said, should be boiled or soaked to fit it for use, and then it may be given frequently at the rate of two or three spoonfuls for a calf. It is recommended also to place before calves lumps of chalk, which it is said they will lick, to the great advantage of their health. Or the chalk may be pulverized, and small quantities given them in their food. It scarcely need be added here, that calves, as well as other animals, require salt, and should have it in suitable portions. In all cases, when calves have attained to any considerable age, they should have hay or grass within their reach, of which they may eat enough to form what is called the cud. It is believed that with proper attention to these requisites, and others which experience and sound judgment will suggest, there will be found no difficulty in keeping calves well on skimmed milk or whey. Care, however, should be taken in every stage of feeding, not to feed calves to the full extent of their appetites. This is deemed quite important.

It is admitted, that calves kept upon skimmed milk and whey are more liable to disease than when they are allowed to suck, or are fed upon new milk. It is said, the principal and most dangerous disease to which they are exposed, is that of looseness or scouring. For this there is a very simple remedy, which is said to be prompt and effectual, is prescribed. It is only to pour into the food prepared for the sick calf, two or three spoonfuls of rennet, such as is used in cheese-making. If calves are costive, as it is said they sometimes are, the remedy recommended in that case is, to give them pot liquor, in which pork, mutton, or bacon has been boiled.

A FATHER.

New-York State, March, 1836.

"*Essay on Calcareous Manures.*"

[FROM THE GENESEE FARMER.]

THE last number of Silliman's Journal contains an elaborate review of the "Essay on Calcareous Manures;" and the following extract will show that the critic entertains the same favourable opinion of its merits that we have expressed on former occasions:

"We have called the use of lime a secret, and it was not only so to the practical farmer, but to the man of science; for even the researches of Davy, who was well aware of its importance, have not completed the theory of its action. It is therefore with no small pride that we can refer to a countryman of our own, as having finished what the most acute researches of European chemists had left unaccomplished. This credit is due to Mr. Ruffin."

The principal fact detailed in the subjoined paragraph of the review was confirmed by our own experiments in 1834, on the limestone soil of this district:

"One curious fact was observed by Mr. Ruffin, in his chemical analysis of the soils of Virginia, namely, that even in regions where the rock by whose decomposition the soil was formed, was limestone, not only did no carbonate of lime manifest itself by effervescence with acids, but no precipitate was formed by the tests of lime in the acid solution. He could not admit that in such soils lime was absolutely wanting, and therefore inferred that it was in such a state of combination as to be neither soluble in water, nor decomposable by nitric acid. Such a combination is the oxalate of lime, but as he made no direct inquiry into its presence, and some of his correspondents have questioned the probability of such an union existing, he has, with the true spirit of an inductive inquirer, modified his assertion until farther proof be obtained. We, however, do not think that so much modesty was necessary, for it can be shown that the formation of oxalic acid, and its consequent combination by superior affinity with lime, whatever may be its previous state of combination, are at least probable, if not certain."

In the following extract, the reviewer has adopted the theory of Sir H. Davy, relative to the effect of plaster, which was controverted by the late Judge Peters of Pennsylvania. We do not presume, however, to determine this mooted point:

"It is upon the same principle only, namely, that it serves as the food of plants, that we can account for the effects of gypsum upon certain crops, which in any other mode of viewing them would appear miraculous. This sulphate of lime, if merely ground, has no attraction for moisture; and if burnt, would rather absorb it from the soil than the air; it cannot, therefore, act as some have supposed, to increase the deposit of dew; it is so sparingly soluble in water, and so inert, that it cannot act as a stimulus—nor is it certainly followed by exhaustion, as all stimuli must be. But although sparingly soluble, it is still conveyed by water into the bodies of plants, though in small quantities; and as that water undergoes the chemical changes which we know are induced by the vital action of plants, the sulphate of lime must be deposited in them, injuriously, perhaps, to some, but as a necessary food to others. Thus it has been found that the ashes of clover, lucern, and many of those plants, whose growth is known

to be most certainly promoted by gypsum, uniformly contain sulphate of lime: it is, therefore, their essential and appropriate food."

He likewise insists with *M. Puvis*, whose work "On the use of lime as a manure," he also reviews, that as this mineral is a part of the food of plants, liming land is in effect providing food for the plants which are to constitute the crops; and that this use was overlooked by the author of the "Essay on Calcareous Manures." In our fifth volume we endeavoured to show that nearly all soils must contain lime in come of its combinations. That view was founded on the the researches of geologists; and it is confirmed by the simple fact, that in every part of the country, lime is found in the ashes of vegetables, in the shells of eggs, and in the bones of animals. We therefore conclude as the quantity that enters into the circulation of plants is so very small, that they are at no loss to find enough in any cultivated soil; and that the chief uses of liming consist in the *preservation of putrescent manures*, and in *neutralising the poison of acid soils.*

The importance of lime as the basis of all good husbandry, is illustrated in the subjoined notice of Belgium:

"Those parts of that rich country which are now most remarkable for fertility, as for instance the *Pays de Waes*, were originally barren hills of blowing sand. They now yield a greater product than any other part of Europe. Great industry and labour have no doubt been expended in obtaining and applying putrescent manures, and in this region the clover husbandry had its rise; but with all this, *no permanent fertility could have been given without the use of lime.* At present a light friable mould of greater depth than can be reached by the plough, and which is therefore occasionally trenched by the spade, covers the whole of the ancient *dunes;* and the whole country presents an aspect, of which no part of ours can even furnish an idea, with the exception of the garden grounds of the *Shakers* at Lebanon."

In noticing an opinion of *M. Puvis*, the reviewer says, "The gases which water dissolves and carries with it, and which yield the carbon and part of the hydrogen of plants, are all derived from the decomposition of organic matter *in the soil itself.* When therefore we can find in the absorption of water by the roots; its ascent in the form of sap; its elaboration in the leaves where so far from an absorption from the atmosphere taking place, oxygen is evolved: in the subsequent descent of the altered sap in the form of gum, rosin, &c. a sufficient reason for the supply of the parts M. Puvis seeks in the atmosphere: we are compelled to dissent from the conclusion."

We are not able to discover the necessity for such dissent; and we confess our surprise that a writer of his intelligence should consider the oxygen evolved by leaves as a proof that carbonic acid is not absorbed from the atmosphere. The fact of its absorption is well attested. Dr. Priestly introduced the leaf of a vine into a phial of carbonic acid gas, and in less than two hours "the fixed air" disappeared. Experiments with similar results, were also made by Ingenhouz, Woodhouse, T. de Saussures, and Sir H. Davy; and the last named chemist, after detailing his own researches on this subject, says, "These facts confirm the popnlar opinion that when the leaves of vegetables perform their healthy functions, they tend to purify the atmosphere." We therefore think the ideas of M. Puvis more correct than those of his reviewer.

But we are told that "the Germans who followed the Quakers in the occupation of the more remote districts of Pennsylvania, brought with them from Europe, a most valuable secret. We call it a secret, for *those of other blood* who see it *used in their presence*, do not discover its value." Now we are bound to conclude that our reviewer, who has discovered its value, must be of German blood. "Honour to whom honour is due," is our maxim. We are certainly indebted to the Germans for our knowledge of plaster, as a manure, and perhaps for as many other important discoveries as to any other people; but we have seen no competent authority to prove that they introduced the use of lime into Pennsylvania. The reviewer has offered nothing more than his own assertion; and we suspect he is not old enough to remember the time of its introduction there. To say that lime is only employed there as a manure by those of German blood, is a great mistake: It has no foundation in truth. *We know* it was used there nearly half a century ago by those of British blood; and who never suspected they were dealing in a secret; or that they were indebted for it to their German neighbours. Why should they? Who will pretend at this day that the use of lime as a manure, is a recent discovery? Or that the memory of its value would not be as easily brought from England as from Germany?

We have been induced to make these remarks out of regard to *historical truth*. The reviewer, however, appears to have fully made up his mind on the point which we controvert; and in speaking of the southern part of Hunterdon county in New-Jersey, he says, "The Germans by the use of lime, raise from thirty to forty bushels of wheat to the acre, and their other products are in proportion; the settlers of Yankee and Dutch *blood*, are *happy* to get from fifteen to twenty!"

We also consider him in an error when he says, "It is only after passing the first range of mountains [from the sea board] that a limestone formation is met with." May we ask what mountain stands between the sands of New-Jersey, and the marble quarries below Norristown? Or between Philadelphia at tide water, and the limestone region of Lancaster county?

We have only one question more: Who has traced the valley of Shenandoah into Schoharie?

Analysis of Soils.

[FROM THE GENESEE FARMER.]

It has been given as the *golden rule* in agriculture, "To use such manures as will make heavy land lighter, light land heavier, cold land hotter, and hot land colder;" or in other words to remedy the existing defect, whatever that may be. In order to do this we must know what that defect is; we must understand the nature of the soil we are to operate upon, in order to determine whether this or that kind of manure is to be applied, or whether a large or a small quantity is needed to bring the proportions of the soil to the standard of fertility. It is therefore of importance that the farmer should be acquainted with the nature and proportions of the constituents of soils; that he should know what these proportions are in such as are most fertile; and also what they are in the soil which he has to cultivate. This cannot be determined with any degree of accuracy but by *analysis*.

Another consideration in favour of analysis of soils, is, that it will substitute precision of language for the very indefinite and unsatisfactory mode of expression which now prevails. Thus for instance, the distinction between a *sandy* and a *clayey loam*, often does not depend so much upon certain proportions of clay and sand, as upon the quality of the soil of the place where the term is used. In a sandy region of the country, a soil might be termed *clayey*, while the same *soil* in a clayey region would be called *sandy*. Another instance: a large crop of some grain or vegetable is raised; the success is principally owing to the nature of the soil; but unless the proportions of its ingredients are given precisely, instead of describing its qualities by indefinite expressions, we are at a loss to know how to imitate those proportions.

The constituents of soils which more particularly influence their fertility, are these:

1. *Stones and pebbles.*—These generally have little other effect than to keep the soil loose and porous, as they are usually hard and unchanging. Sometimes, however, they absorb and retain water, and also disintegrate and mix with the finer parts of the soil.

2. *Siliceous matter.*—This is commonly in the form of fine and coarse *sand*. Soils where this predominates are little injured by water, having little attraction for it, and retaining it feebly. They never *winter kill* wheat.

3. *Aluminous matter.*—This is the predominant constituent of *clay* soils. Unlike the preceding, it has a powerful attraction for water, and retains it strongly; hence clay will remain long suspended in water, while sand sinks immediately. Aluminous soils suffer from too much wet, and bake hard in a dry season.

4. *Carbonate of lime.*—This exists in the form of limestone, chalk, and shells. It is a principal constituent of marl. Soils which have a due proportion of this ingredient, are naturally fertile and durable in a high degree.

5. *Animal and vegetable substances.*—These improve the soil by operating in several ways. They give *warmth* to the soil, furnish nutriment directly to the plant, absorb moisture and nutritious substances from the air, and render the soil loose and preserve it in a state of pulverization.

6. *Water.*—The power soils possess of retaining moisture enables them to resist the effects of drought. In analysis, the quantity of water held by soils after being exposed to the sun's rays, is that only which is considered as forming a component part of them.

The following method of analysing soils, or ascertaining the proportions of their component parts, is, if carefully conducted, sufficiently accurate for all *practical* purposes.

Specimens of the soil should be taken about three inches below the surface, and from the average of the field. A convenient quantity to experiment upon, after stones are separated, is about 400 grains.

1. Separate by two sieves all the stones and pebbles; with one, those larger than a quarter of an inch in diameter, and with the other those less. To effect this, the soil must be well dried in the sun and gently bruised in a mortar. Then ascertain by weighing, the rate per cent. each bears to the original mass and note it down.

2. The soil after weighing is then placed in a crucible and heated ten or fifteen minutes to a temperature of about 300 Fahrenheit, constantly stirring it; and if a thermometer is not used, the proper degree

of heat may be easily ascertained by means of the wooden rod with which it is stirred; while the colour of the wood remains unchanged it is not too hot, but as soon as it begins to become brown, the process must be stopped. It is then again weighed, and the loss is set down as *water*.

3. It is next returned to the crucible, and exposed to a high red heat, till no blackness remains in it, repeatedly stirring it with an iron rod so as to expose new surfaces continually to the air. It is again weighed, and the loss denotes the amount of *animal and vegetable matter*.

4. Mix the remainder with three or four times its weight of water, stir it thoroughly for several minutes, until it is intimately diffused, and then suffer it to rest. The coarse sand will fall to the bottom of the vessel in about a minute, the finer in two or three minutes. The liquid is then poured off into another vessel, the sand dried and weighed, and its quantity noted down as *silicious soil*.

5. The decanted liquid is suffered to stand till it settles and becomes clear; it is then poured off, and the sediment dried at a red heat, weighed, and set down as *aluminous soil*.

6. The presence of carbonate of lime in soil, (which is generally in small quantities,) is readily ascertained by pouring upon it muriatic acid diluted with water. If it contains carbonate of lime, an effervescence immediately takes place in a greater or less degree, according to the quantity. To ascertain the proportion of this ingredient, place a new portion of the soil in a glass vessel, and ascertain its weight; also determine the weight of about a gill of diluted muriatic acid, and place weights in one one side of the scales to balance them both; then pour on the muriatic acid. In three hours, all the carbonic acid from the carbonate of lime will have been driven off, and after blowing it out of the vessel, ascertain the loss of weight. Then as 22 is to 50, so is this loss to the amount of carbonate of lime in the soil.*

It may be important to be able to detect sulphate of lime (gypsum) in soils, though it is not generally looked upon as a component part. The following is Sir H. Davy's method: A given weight of soil must be heated red for half an hour in a crucible, mixed with one-third of powdered charcoal. The mixture must be boiled for quarter of an hour, in half a pint of water, and the liquid passed through a filter, and exposed for some days to the air in an open vessel. If any considerable quantity of gypsum exist in the soil, a white precipitate will gradually form in the liquid, and the weight of it will indicate the proportion.

The most fertile soils are those which contain a proper proportion of the different ingredients. The following are the proportions of a rich alluvial soil, given by Sir John Sinclair as the most fertile for grasses. Silex, (including stones and sand) 71 parts, alumine 7, carbonate of lime 6, animal and vegetable matter 9. It also contained one part in 200 of gypsum. The proportions agree very nearly with those given by Professor Eaton of the best river alluvion near Troy, (N. Y.) These were, Silex, (including stones and pebbles) 75, alumine 7, carbonate of lime 3, decomposed animal and vegetable mat-

* Where accuracy is required, or where the proportion of carbonate of lime is large, the lime must be deducted from the silex, and the weight of the carbonic from the animal and vegetable matter.

ter 11, soluble salts 1, water 3. A soil whose constituents approach these, cannot be unproductive in any climate.

The minuteness of the division of the parts of soil greatly influences its qualities. In the first part of the above soils, 185 parts only out of 400 could be separated by a very fine sieve. Poor soils often have 300 parts out of 400, of coarse materials.

The attraction which soils have for water, so as to remain suspended in it when mixed with it, also influences their qualities. According to Eaton, when any soil, or any portion of it, will remain suspended in water over *four hours*, wheat sown in it is often "winter killed." The river alluvion (above given) settled clear in two hours. A clay alluvion of the following composition did not settle till 26 hours: silicious soil 48, aluminous 39, carbonate of lime 2, soluble salts 2, animal and vegetable matter 5, water 4.

In determining the standard proportions for a good soil, it must be remembered, that as different plants have different systems of roots, branches and leaves, they flourish best in different soils; bulbous rooted plants need a looser and lighter soil than fibrous rooted; and plants having only short fibrous roots, demand a firmer soil than such as have long, and deep tap roots. It may also be observed, that a rainy region of the country needs a light soil, while a dry one needs a rich retentive soil, in order to prevent too much wet in the one case, and drought in the other.

Smut in Wheat.

[FROM THE MAINE FARMER.]

Mr. Holmes,—In No. 6 of the Farmer, I noticed a short piece headed "Preventing Smut in Wheat." Having had some experience upon that subject, a few remarks, perhaps, will not be uninteresting. You say, we believe that it is pretty generally thought that smut in wheat is a sort of fungus or minute vegetable, which grows upon or in the kernel of the wheat, as the proper soil for it to flourish in, and that the black dust is the seed, or at any rate, the cause of more smut in the succeeding crop. That this seed lodges in the beard or farze on one end of the kernel. Now, Sir, by the last remark in the article alluded to, you express an opinion that the whole is not learnt yet, which is proved by so many failures happening. Sir, I think you are right, and but a small part is known. I will not say much upon the above simple theory, and will only observe that no man of sense would suppose that a little dust falling on the outside of a sound kernel of wheat would make it defective at the core, and its offspring become a bunch of black dust. Now, Sir, I think it much like the quack Doctor who is ignorant of the nature of the disease for which he is called to prescribe—but then something is the matter and something must be done—he fixes a medicine the qualities of which he is as ignorant of as he is of the disease—by chance a cure is effected—perhaps by Nature's own remedy the medicine had no effect at all. Now the quack gets the credit—he believes he has hit the sure remedy—he then tells the world he has found out the secret—he has found a medicine that will cure all similar diseases; but the next thing is a failure, the wonderful medicine will have no effect at all. The reason is, it is good for nothing. Now the disease in wheat is like it. The cause is not known—the prudent farmer thinks he must

do something—he does do something—he has little or no smut—then he thinks he has found a remedy, but it fails; the reason is this, the first time Nature effected her own cure, and the farmer thinks he has done it, but he is mistaken—all the difficulty is in not knowing the cause. Now, Sir, I have been satisfied of the cause of the smut in wheat for more than fifteen years, and have had no reason to doubt, in any case, the cause when it has happened. I will first give you my experience. I had smutty wheat in the spring. I had about four bushels to sow. I first washed the wheat—washed out about one-half bushel of smut and light grain and some good. I took one half of that I had washed out and soaked it in strong lime water five days and sowed it smut and all. Then on the other spot I sowed the part that was dry the same as it was when washed out. Then the clean grain I put in four quarts of good lime, covered it with water, let it stand four days, stirring it each day—I then sowed the whole. In the fall I found where I sowed the dry smut and filthy grain about 7-8 smut, and what was not smut was small and poor—and on that spot where the smut was soaked in lime the grain was good. no smut, and large full heads. My other grain was good and clear from smut. Now, Sir, I have no doubt but the cause of smut is this, the kernels become carious, a small part of the same kernel is carious or smutty, and a part sound, so that it will sprout and grow, which will produce the smut. How they first become carious I do not know, but suppose it is caused by our method of sowing it, the ground being incumbered with weeds and grass, it cannot all arrive at perfection as it does in England, when it is sown in drills and kept clear from weeds. I have found the kernels that produce the smut—they may sometimes be found in heads that are part good and part smutty—some kernels will be a third part good and the remainder smutty.

Now for a remedy that will never fail. All that you have to do is to destroy the unsound grain—you may do it in any way you please, and sow in any soil you please, and I will pay all damage on account of smut. The fermentation of the manure, or the nature of the soil or wind, has nothing to do with it. What effect blue vitriol would have I am not acquainted with its qualities—any thing that will destroy the good grain in a given length of time will destroy the carious in a less time, no matter what it is. Any person that is acquainted with soaking wheat in lime water, or any thing else, to destroy the bad grain, can tell by examination when the carious grain is destroyed—the defective may be easily found by the second or third day—the lime water will enter the defective part and cause it to swell and become soft, while the sound grain will be good and will not be destroyed till some days longer. Some of my neighbours use hot lie; this will kill the smut, but it wants some experience to know how long to let it stay in and how hot. My rule is four quarts of lime to a bushel; put the wheat in a tub or something that will hold water, then add the lime, cover the whole with water, stir once a day; if the water settles, more must be added to keep it covered, or it will sprout. After it remains in this state four days it may be sown—the only difficulty is if the weather should be bad, or the ground should not be in order, salt may be added and it will keep any length of time. Grain may be kept in a strong pickle of salt for months, and I think years without damage to its growth, but it will not prevent smut. I will mention one objection which my neighbour suggested to my theory. He said that he let his neighbour have a bushel of wheat that was

some smutty, which he sowed, and there was no smut at harvest. He also sowed some of the same seed and it was smutty—the seed was both treated alike, nothing was done to either to prevent smut—now the question is, why were not both smutty? After considerable inquiry I satisfied myself as to the cause. I found the smutty wheat grew on dry land, while the other was wet. Now on the wet land the carious wheat rotted and never came up, while the good remained sound, till the ground become dry, and it grew, and on the dry ground the whole grew, and of course there was smut. F.

Sea Sand as Manure for Potatoes, &c.

[FROM THE NEW-ENGLAND FARMER.]

A letter from William Moody to the Hon. Josiah Quincy, published in the 4th volume of the Massachusetts Agricultural Repository, page 353, recommends sea sand as an antidote against the wire worm, and has no doubt it would prove efficacious against other insects which infest potatoes while growing. This writer says,—"I am persuaded from experience, that sea sand, put under corn or potatoes with manure, or spread on the land, will go far, if not wholly, to the total destruction of those destructive worms on which nothing else seems to have any effect. It has a beneficial effect spread on land before ploughing, or even after land is planted with corn or potatoes: not only to destroy the wire worm and other insects, but to increase the crop. With my neighbours a load of sea sand is considered preferable to a load of their best manure, to mix in with common barn manure, or to spread on their gardens and low flat land."

Mr. Moody likewise says in the same letter, "late planted potatoes, which are gathered in before ripe, are far the best for seed the next year. If kept in a dry warm place in a cellar, they will be much earlier, and likely to produce more abundantly the next year, and will be as good for use the following spring, though they may not be so good in the fall."

Mr. Moody's opinion relative to planting late or unripe potatoes, is corroborated by an article originally published in the New-England Farmer, vol. v. page 409, in which it is stated, that "the ripe potato, having performed all its operations, becomes more inert; but the circulation of the sap in the unripe tuber having been stopped, it starts more readily, and with greater vigour when planted; the one seems to die, worn out with age, the other seems accidentally to have fallen asleep, and when awoke possesses an unspent vigour and energy.

Remedy for the Croup.

[FROM THE NEW-ENGLAND FARMER.]

THE Medical and Surgical Journal of March last, contains a communication from Dr. J. D. Fisher, of this city, describing a new and successful mode of treating that alarming disease of childhood, the croup, which ought to be generally known. The prescription is simple and easily applied, and it must be evident that if it should not afford effectual relief to the sufferer, it will not increase the disorder.

In the absence of a regular physician, this application may in some cases prove of immense benefit. The following is the statement by Dr. Fisher:

"I was called, at 5 o'clock last evening, to a child which was labouring under a severe attack of the croup, consequent upon a sudden disappearance of the eruption of the measels. The croupy symptoms appeared suddenly, and had existed one hour before I was called. The child on my arrival, was in extreme agony, struggling and gasping for breath, and I thought the little sufferer was in danger of immediate suffocation. The first means I employed was the application of very hot, almost boiling, water to the throat and upper part of the chest, by means of large sponges. These applications I repeated every two minutes, and immediately the skin became coated and very red, and in the course of a quarter of an hour the little girl breathed much easier, and her croupy cough and respiration became less shrill and tubular, and much modified. Soon after making the first applications of the sponges to the throat, I wrapped the child in a woollen blanket wrung out in hot water, as a substitute for a warm barth, and gave it twenty drops of wine of antimony, in a little sweetened water, which she swallowed with difficulty. I persevered in the applications of the hot moist sponges for an hour, when the child was so much relieved that I ventured to leave it for half an hour—ordering the remedy to be continued. On my return, I found the patient breathed with comparative freedom, its respiration and cough less sonorous and shrill, and its pulse softer and more natural. I recommended the applications to be continued until the child should be decidedly relieved, and prescribed six drops of antimonial wine to be given every hour in a little water. The mother of the child informed me this morning, that she continued to apply the hot water remedy for five hours, but not so often as I applied them—that the child continued to improve, and fell asleep soon after I left it. This morning she is bright and playful, and asks for food. The respiration is quite easy—pulse soft and natural; cough humid and loose, its sounds having lost the shrill croupy character.

I was induced to employ the above remedy, in consequence of having lately read in a foreign journal that it had been suggested and employed by a German physician with decided and uniform success. As the remedy is simple, and is at ready command, and as its application in the present case was attended with such decided and immediate happy effects, I would, with a good deal of confidence, advise mothers and nurses in similar cases to apply it early and perseveringly until medical aid can be obtained. The sponges should be gently squeezed before they are applied, so that the water shall not ooze from them, and should be gradually compressed during the time they are applied, so as to continue the temperature up to the highest degree that can be sustained by the patient. Should not sponges be at hand, napkins wrung out in boiling water may serve as good substitutes."

The Silk Business beginning in Petersburgh.

[FROM THE FARMERS' REGISTER.]

A company has been recently made up in this place to begin the business of mulberry and silk culture, as soon as the proper season arrives; and from our knowledge of the individuals who have commenced this enterprise, we can safely predict, that there will be nothing wanting to ensure success, if zeal, energy, intelligence, and the investment of sufficient capital can command it. We rejoice most heartily in this movement—and consider it as the germ of future results of incalculable value to this region. In all our many efforts, made through this publication, to urge the commencement and zealous prosecution of silk culture in Virginia, we have not pretended to have any personal knowledge of the particulars of the business, or the grounds on which to estimate profits. But we have assumed this general position, which we think cannot be shaken—*that if silk culture is profitable in New-England*, (as it undoubtedly is,) *much more profitable must it be, in lower and middle Virginia.* We have superior advantages, (for this purpose,) to our northern brethren, in our warmer climate and longer summers—the very low prices of lands—and also in a large amount of labour, altogether suitable, and which yields nothing for other purposes. Lands in the central region, exhausted and hilly, but well suited for the growth of the mulberry, may be now bought at $2 or $3 the acre. For land of much less value for silk culture, the silk companies of the north seldom pay less than $100 the acre. So great is the difference in these respects, that we have long entertained the opinion, that by far the best course that a northern silk company could take, would be to establish its operations on a large scale on lands in Virginia.

There is an establishment already existing in Petersburgh, which is admirably suited to be devoted in part to raising silk. This is the Poor House Farm. This establishment is unusually well regulated, and has already every thing necessary to carry on the silk business on a large scale, except the mulberry trees, and a cheap additional building for a cocoonery. There is enough and good land to plant—plenty of suitable labour, there being usually thirty or more young or infirm paupers, most of whom are fully competent to attend to this light work, and whom it is impossible now to employ, profitably, if at all; and moreover, there is already existing, that constant and excellent supervision and strict attention, which is indispensable to the success of the silk business, and which it would be both costly and difficult to obtain for a new establishment. Nor would the adoption of this suggestion create a rival to the silk company just formed. On the contrary, every like experiment would serve to aid and increase the lights, and to lessen, by sharing the losses, caused by inexperience, of every other new establishment. There is no danger of overstocking the silk market, even if silk was cultivated on every farm in Virginia, between the falls of the rivers and the mountains.

In all the Northern States, individuals and societies are every where going into the silk business. Many and large capitals are already invested—and every week there are annunciations of other new undertakings. No one there expresses even a doubt of the success and profit of the business: and it should be remembered that silk culture has

already been carried on profitably for more than half a century in Connecticut.

Wherever the white mulberry tree grows, (no matter of what colour the fruit may be,) proprietors ought to save the seeds of the present crops, as largely as possible. There can be no crop planted that will yield more profit, for sale, than the young trees, unless it be of the still more valuable Chinese mulberry. The white mulberry grows abundantly along the shores and banks of James River, and probably on all our tide water.

Queries relative to the Culture of Silk.

[FROM THE SILK CULTURIST.]

Allentown, (N. J.) Feb. 12, 1836.

Sir,—The manufacture of silk, and the cultivation of the mulberry in the United States, has become a subject of such great importance, that the quiet of our village has been roused by its influence, and several of us are now making arrangements to plant orchards in the spring.

The business is new, and though your excellent paper would seem to contain all the information required by those engaging in it, yet there are some apparent contradictions by your correspondents, upon matters which we, who rely upon what we read to guide us in the enterprise, are desirous to have reconciled. Hoping, therefore, that you will receive this as a sufficient apology for intruding upon your time and attention, allow me to propose the following queries.

Some of your writers say the young trees should not be stripped sooner than five years from the time they were transplanted. Others, that worms in sufficient numbers may be fed from them the second year, that is, the next year after transplanting them, as I understand it, to defray expenses, and that the third year's crop will furnish silk enough to give a nett profit of $100 per acre.

1st. Which statement is the practical and true one?

2d. How old from the seed should the plants be, before they may most profitably be transplanted?

3d. From an orchard planted in hedge form, the plants 2½ feet distant, and the rows 12 feet apart, how many worms may be fed the second year, supposing the statement to be correct, which advises this early leafing?

4th. If I am not mistaken, M. D'Homergue in his book, notes American cocoons, without their chrysales, at 8 grains, which would require 960 to the pound, whilst a writer in your paper gives from 260 to 300?

5th. You state $3 per bushel, as the price of cocoons—how are they measured? Three bushels may, without difficulty, be put in and on one.

6th. Can cocoons by any care be packed for market without indenting vast numbers of them, which is said to destroy their value?

7th. Before measuring and packing, are they stripped of the floss, or are they sold with that attached?

8th. What amount of silk can an ordinary reeler wind from the cocoons in a day?

If it will not tax your goodness too far, to answer in the next number of the Culturist, the above queries, you will, by so doing, greatly oblige your humble servant,

WILLIAM IMLAY.

P. S. From the inducements held forth in your paper, I have purchased 7000 trees, to be planted in the way stated in the third query. Three other gentlemen in our village, are preparing to set out an equal number.

—

ANSWERS BY THE EDITOR,

1st. It is the opinion of the most experienced culturist, that trees two years old, may be stript of their foliage without injury, provided the leaves on the extremities of the branches are suffered to remain. It is, however, recommended by some, to let the trees remain one year after the first picking, in order that they may recover from the loss of their foliage. Trees of two and three years old, yield but little foliage, and consequently, not much profit must be expected from them. It is, however, supposed that potatoes, beans, or other low vegetables may be raised among them, in sufficient quantities to defray the expense of their cultivation and give a small profit.

We have had no experience in feeding from trees of this description, but a gentleman of this country informs us, that he fed, the last season, 50,000 worms, on the foliage of 50,000 white mulberry trees, on their third year's growth, and made at least ten pounds of silk. The method he pursued, was by pruning the trees, in such a manner as would best promote their growth and form, and feeding the worms on the boughs cut off. These with such other foliage as he could gather from the remaining branches, furnished him with food sufficient for his family of 50,000 worms. By this experiment it will be seen, that a tree on its third year's growth, sustained a worm, and enabled it to make its cocoon. The Chinese mulberry at two and three year's old, will yield an abundance of foliage, and much more than $100 nett profit may be made from an acre thickly set, and highly cultivated.

2d. Trees should always remain in the seed bed, or nurseries, until they are two or three year's old, if they are to be transported any considerable distance for transplantation. The last spring we transplanted 10,000 seedlings, about half of which died. They were, however, transported about twenty miles. and were sometime out of the ground. When trees are to be merely transplanted from the nursery, to the plantation, it is considered by many, advisable to remove them at one year old. They will put out more branches, require more pruning, and consequently, furnish more food for the worm, at two and three year's old.

3d. It is impossible to answer this inquiry with sufficient precision for any practical purpose. Much depends on soil, cultivation, pruning, &c.

4th. The weight of cocoons, and the number in a pound, varies according to their quality, the time when they are weighed, &c. We should think they would average from 250 to 300, to the pound, immediately after the worm is destroyed, and before they are thoroughly cured. As they become dry, they lose their weight, and when perfectly so, a pound, of some qualities, may require the number stated by M. D'Homergue.

5th. Cocoons are measured by putting them gently into the measure and rounding it. There is a difficulty in ascertaining their actual

measure or weight, as they vary materially, according to the manner of measuring, or the time of weighing. The most equitable method of coming at their value, is to weigh the silk after it is reeled, and for this purpose, among others, should the grower acquire the art of reeling. Until this is done, the better way is to carry the cocoons to the filature and have them reeled by a skilful reeler. The silk can then be weighed, and the expense of reeling deducted—the number in a bushel varies according to their size, ranging from 2,500 to 3,000.

6. There is no difficulty or danger in packing or transporting cocoons, provided the directions for preserving and transporting them, given in former numbers, are duly regarded.

7th. The floss ought not to be taken from the cocoons if they are to be sent to market. It prevents their becoming indented, which materially injures them. Some manufacturers prefer flossed cocoons, on account of the measure, but what they lose in measure is more than made up to them in their quality.

8. The quantity of silk which can be reeled in a day, depends upon the quality of the cocoons, the reel used, and the experience and dexterity of the reeler. Some reelers will reel a pound; but the average among ordinary reelers, would not much exceed half that quantity.

A Silk Growing Country.

[FROM THE NORTHAMPTON COURIER.]

FRANCE is considered a silk growing country, yet she does not grow sufficient for her own manufactures, and it is said. annually imports raw silk to the amount of $6,000,000.

England, owing to the humidity of her climate, cannot raise the worms to advantage, and for her numerous manufactories is obliged annually to import the raw material from other countries to the amount of $17,000,000. It is stated that we import annually of raw silk to the amount of about $10,000,000, and of the manufactured over sixteen millions.

Unless the United States push the culture of the mulberry and raising the cocoons, beyond any thing now in operation, many long years must intervene, before we can supply the demand of our own markets. Inhabiting as we do one of the best climates in the world for manufacturing silk of the best quality, instead of paying ten millions of dollars annually to other nations for the raw material, we ought to export two or three times that amount.

It is said our imports of silk stuffs exceed our export of bread stuffs —why is this? Only because we do not duly appreciate and improve the means we have. Let our intelligent farmers be convinced that the silk business is profitable, and then we can hope that every exertion will be made to extend the cultivation of the mulberry and raising of cocoons.

It is a matter of regret, that any one should view the subject as a wild project, and say, that although it may be a good business for a few years, if found lucrative, every body will engage in it, and glut and ruin the market. We wish the subject could be so represented to our fellow-citizens, as to impress them with the importance of examining the subject, on the broad scale of greater national importance than any agricultural subject ever yet pursued.

But if doubts and fears shall remain, we only ask them to commence the culture of the mulberry on a limited scale for a few years, not to interfere with any other agricultural pursuit. Let the experiment be made upon some of our almost barren and useless portions of poor, dry, stony and gravelly soil.

It may be asked, if the silk business can be made more profitable than any crop, why not take the best and richest land? A fair question indeed, but such land is not best for the Chinese mulberry, and it would be desirable to have every patch of poor, waste, dry land devoted to some useful purpose.

Beet-Root Sugar.

The following letter appeared in the Boston Daily Advertiser. The statements it furnishes are, beyond doubt, accurate, and we hope, will induce some of our agriculturists to make experiments in the manufacture.—*Ed Gen. Far.*

Boston, March 28, 1836.

If you should judge the present communication worthy of attention, it is at your disposal. In order to satisfy yourself concerning the authenticity of my statements, I subjoin documents for your perusal, when at leisure.

The manufacture of sugar of beet has ceased to be an object of ridicule; the advantages that France draws from it are palpable and great, and the benefits which the manufacturers derive from it are now such, that the French Minister of the Treasury has proposed to lay a tax upon it. France owes this new branch of industry to that great man whom she will honour through all times; for, had it not been for his sagacity and powerful assistance, it would have shared the fate of many other improvements, lying for ages, or dying in their infancy, once pronounced by ordinary men visionary projects.

The discovery that beet contains a perfect sugar remained for over 60 years without any useful application; many attempts, however, had been made to derive the benefit of it; but those having made these attempts, being rather men of science than men of business, having operated only upon a small scale, with purely scientific views, and having made no calculations, either of expenditures or results, they had no ground to proceed upon. I undertook to solve that problem, and to that effect made the first, in France, an experiment on a large scale, and by a sufficient reward induced a chemist to assist me.

The result of this experiment was transmitted to Napoleon, on the 19th of March, 1811, and by his order rendered public; and though the birth of his son took place on the 21st of the same month, on the 25th following appeared the decree, a copy of which is among the subjoined documents. By this decree, you will perceive, he created six experimental factories for the manufacturing of sugar, he appoints me director of one of them, which factory he gives to me in property, as a reward for my labour, and for having *(perfectonne)* improved the process for obtaining the sugar of beet. Such was my zeal, that my factory in the fall of 1813 was prepared, and all the beet raised by me or contracted for, so as to produce 1500lbs. a day of brown sugar, and the same refined. The first entry of the allies into France caused the total ruin of my establishment. Up to 1816, political events were unfavourable for sugar making, but from that year this

manufacture was resumed, and since never ceased to increase and improve; it is now computed that over 300 such manufactories exist, producing together yearly about from 18 to 20 millions of pounds of brown sugar.

Now, Sir, since the making of sugar of beet begins to attract the attention of some agriculturers of this country, I deem it of interest for them, and to gratify the curiosity of others, here to state what were the calculations made in France in 1832, (the latest date of my information) and add a few observations respecting the benefits one may derive by the mere culture of beets in this country, viz:—

That one ton (2000lbs.) of beet delivered at the factory, costs, - - - - - - - -	$3 00
That the expenses to work one ton of beet for obtaining its sugar, - - - - - -	$4 00
That 2000lbs. beets will yield 100lbs brown sugar, costing, - - - - - - - -	$7 00

Thus one pound of brown sugar, good quality, cost 7 cents.

By a comparison of the expenses of culture in various parts of France, and on various soils and situation, the average expenses of cultivating there the extent of an American acre of land, are as follows:—Rent and taxes, $5 60: ploughing and harrowing, $2 88; manure, $1 93; sowing, 50 cents; weedings and hoeing, $2 40; gathering, $1 60; carting, $2 56; farmer's profit, $4 00. Making a total of $21 46.

The produce varies according to the quality of the soil, the quantity of manure used, and the care bestowed on the culture—as we have taken the average of the expenses, so we must take the average of the produce, which is of 7 tons. Some lands yield as much as 15 tons.

The four dollars profit the French farmer derives from this culture, on every acre, is far from being the only one; the others are,

1st. The good state in which the field is left after gathering the beets—no further manure being wanted for the succeeding crop, which crop, experience has proved to be alway more abundant and of a better quality, when succeeding the culture of beets; owing to the destruction of the noxious weeds, caused by weeding the beets when young, and prevented from growing, by the thick foliage of the beets, when strong.

2d. The facility afforded the cultivator to apply to the culture of beet, lands which he formerly let lie fallow, and consequently, without any additional expenses of rent and taxes, deriving as a good revenue from this land as any other producing the most.

3d. The advantages the cultivator derives by the purchase from the manufacturer, of the pumice of beet at a price not higher than beets, when experience has proved this pumice is worth for him fifty per cent. more; for in fact it is after all but beet—deprived of two-thirds of water, and consequently a more nourishing food for his cattle; perfectly fitted for fattening them, producing wonders in that respect, which could not be expected from beets in their natural state.

The following is a statement of the receipt and expenditure of a sugar establishment, as reported to the society for the encouragement of manufacture in France. The whole work was performed in ninety-one days.

Purchase of 500 tons of beet, delivered at $3 20, -		$1600 00
1638 days work of men, at 20*s*., 455 do. of women, at 12*s*., 364 do. of children, at 5*s*. - - - -		$4000 40
For extra work during the night, - - - - -		109 20
40 cubic feet wood for fuel daily, (28 cord 3-100 at $16 7-100 per cord,) - - - - - -		473 20
Sundry materials for manufacturing purposes, -		813 60
Food for 18 oxen used in the mill, - - -		163 60
Interest on $3000 at 15 per cent. for wear and tear,		450 00
Rent for buildings, - - - - - - -		120 00
Total, - - - - - -		$4130 00
Deduct for molasses sold, - - -	$320	
125 tons pumice, at $3 20, - - - -	400	
Value of some material left, - - -	30	750 00
Produce of 50,000lbs. brown sugar, at $00 67-10,		$3380 00
Sale of 36,000lbs. 1st quality, at $0 15, -	$5400	
Sale of 14,000lbs. 2d quality at 10, -	1400	6800
Profit, - - - - - -		$3420 20

Should this notice be favourably received, I have at your disposal a few particulars respecting the cultivation of beets.

I am, respectfully, Sir, your most obedient servant.

MAX'N. ISNARD,
French Vice-Consul for Boston.

Ruta Baga, Mangel Wurtzel, and Carrots.

[FROM THE GENESEE FARMER.]

East Bloomfield, April 28, 1836.

PRACTICAL farmers always wish to know the result of experiments tried in the various branches of husbandry in which they are engaged. It is not sufficient for them, that a plausible theory has emanated from the brain of one who is much better skilled in the use of the pen, than in holding the plough. We wish to know the minutiæ, not only of the process by which he arrives at his conclusion, but the variations which usually attend the bringing any theory to the test of actual experiment.

It is a very common remark that writers upon agriculture are mere theorists. But, however, well the remark may apply to other ages and other countries, to this it is becoming more and more inapplicable. We have many writers of highly cultivated minds, who are practical agriculturists; and the amount of information which they communicate yearly is of great value.

Not to make the preface longer than my story, or lay claim to any usefulness in my communications, I would merely say, that having cultivated ruta baga for three years past, and mangel wurtzel and carrots for the last season, I am willing that others should know of my failures as well as my success, and my opinion of their relative value as food for farm stock.

Ruta Baga.—My success with this root has never been good, I think the failure to be attributed to the soil being heavy, more inclined

to clay than sand. It evidently requires the lighter soils. I have found the culture very inconvenient as they must be often weeded and hoed in the most busy season of the year. My crop last year was tolerably good, considering the disadvantages under which they were cultivated. They are very easily kept through the winter, either buried in the field or stored in cellars. They are good for the table, for sheep and cattle. But for horses or hogs they will bear no comparison with carrots or potatoes. The labour of cutting them is considerable, as they are hard, and dangerous for cattle unless cut fine.

I would not wish to discourage any one from raising them, even on heavy soils, if they have leisure to weed and hoe them sufficiently during wheat harvest. I intend to continue their culture, but reduce the quantity until I can give what I do raise the requisite attention.

Mangel Wurtzel.—So far as one year's experience goes, I am highly pleased with this root. My crop kept well buried in the field. A few of the upper courses were frozen, but I fed them before they thawed, their value was not much diminished. I commenced feeding to new milch cows in March, slicing them and mixing a little barley meal with them. They are very brittle and juicy, and my cows gave almost as much milk as when feeding upon the best of pasture in the summer. I also fed them to sheep having lambs along in April, and I think they preferred them to the ruta baga. Cattle and sheep require more salt than usual while feeding on them, I found no tendency in them to cause the scours, as suggested by some writers. Hogs eat them freely, but horses are rather shy of them. It is not necessary to cut them for sheep or hogs, and the larger ones may be fed to cattle without danger of their becoming choked by them.

Carrots.—This is a root which has long been cultivated in gardens, yet few have learned their value. The remark made by some writer in the Farmer, that they were worth as much per bushel as oats for feeding horses, does not seem so extravagant to me now, as when I first read it. Although I have instituted no accurate experiment to ascertain their value as horse feed; this much I have learned, that horses are very fond of them, and my horses, which are very heavy horses, became fat on cut straw and three quarts of barley meal, with five or six carrots, for a daily allowance. When I corded my crop, I covered them with their tops, thinking to make them of some use, although nothing will eat them.

This was unfortunate, and came near being the ruin of the crop, as they fermented and rotted, and would have rotted the whole heap, had I not opened them early. Although some of the upper courses were frozen, the frost does not injure them as much as other vegetables, for milch cows, working oxen, horses, hogs and sheep, I know of nothing better than carrots. The seed does not always vegetate, and they are rather a small affair when first up, but after they are up an inch or two, they may be cultivated with as little trouble as any root. Mangel wurtzel has, however, an advantage over them, in that the tops of the wurtzel will almost pay the whole expense of cultivation, while carrot tops are useless. Wurtzels grow much larger, and are much more easily gathered, while the larger carrots grow so deeply in the ground as almost to require a steam engine to pull them up.

Thus much for the experience of O. P. Q. in the root culture.

Cause of the Decay of Peach Trees.

[FROM THE PLOUGH BOY.]

Dear Sir,—In pursuance of my promise, I now offer the discovery I have made, relative to the decay of peach trees.

The peach tree is caused to decay by the ravages of a worm, which originates from the egg of a large fly, that bears some resemblance to a wasp. This fly pierces the outer bark of the tree, above ground, and deposites an egg in the inner or green part of the bark; as soon as the worm is hatched, it makes its way downwards, between the bark and the wood of the tree.

These facts are shown by an examination of the tree, for where the worm began, the hole is small, and gradually enlarges, until you come to the worm, or the place where it made its exit; thus corresponding with what is observable in the progress of all, or nearly all wood worms.

If the worms begin a few inches above the ground, the frost sometimes comes on before it gets far enough below the ground, and destroys it; but if the ground about the roots of the tree be covered with snow during the severe frosts, which prevents the ground from freezing deep; the worm in this case, will survive the coldest winter. In the spring, the worm commences its ravages anew; and now is the time it does the most mischief—for as soon the sap begins to move, it oozes out in the form of gum and water from the fresh wounds made by the teeth of the worm, until it is grown, when it voluntarily leaves the tree, which it does about the last of June, or first of July.—Half a dozen worms about the roots of a common sized tree, will destroy the whole tree; but if the worms are only on one side of the tree, then only one side, or perhaps a few limbs of the tree will be found dying. The effects of the worms extend from one-half to an inch on each side of its track, or hole in the bark, as I have always observed the bark to be dead for that distance; so that a worm for every inch and a half round a tree kills it all but the roots, and sometimes even these; but if the worms are scattered so as to leave spaces of two or more inches, the tree will be observed to revive after the first of July, or near that time; but if the succeeding winter is favourable to the life of the worms or the egg, the next spring the ravages are commenced anew by another generation, and the life of the tree is destroyed.

About three years ago, my attention was drawn to this subject from the almost universal decay of peach trees, in my neighbourhood. You will recollect that the winter was severely cold; yet in the coldest weather then, the ground was covered with snow. All my neighbours attributed the decay of the peach trees, the following spring, to the severe frosts—but I felt doubtless, as I knew that peach trees thrive well in all parts of Canada, where it is much colder than here.

On examining some trees that were decaying, I found a quantity of gum on the ground, by the roots, and on scraping the earth from them, I found that the gum had oozed out (part of it,) under the surface of the earth. I then began to scrape away the outside bark, and soon came to the worm, and was at once convinced, from the effects I saw, that these were the cause of the trees decay; and from that time, I have carefully observed its progress.

The worm is white, similar in size, shape and colour, to the common white, flat-headed wood worm. Its mouth is black, or perhaps,

nearer to a mahogany colour, and its progress is uniformly downwards; it sometimes begins to from three to six inches above ground, but generally near the surface, and is seldom found deeper than six inches below the ground.

I have been thus particular to induce farmers to examine their trees. Wherever gum is found at the root, there the worm, or traces of its ravages will be found. And having observed that where a few trees have been standing in a yard, and the ashes of the fire place have been thrown about their roots, or where they were overflowed with water in the winter, the trees are not affected and are alive. On observing these facts, I advised several farmers of my acquaintance to have ashes thrown about the roots of the peach trees every spring at least; and in all cases, the experiment has succeeded—not a single instance of a worm, or death of a tree, except from external violence, has occurred among those that have been so treated.

I will now offer a few remarks as to the proper method of cultivating the peach tree with success for bearing fruit with perfection.

1. The young trees or sets, should never be trimmed or pruned near the ground; and if the seedlings sends forth many branches from the root, they should be carefully kept to the root, and set out again (when transplanted,) in a cluster, as they come up; or branched out from seeds, and suffered to grow as they will.

2. The peach, of all others, requires an open place, clear of shade, and in a warm soil, and a soil that is tolerably dry. I have always remarked that trees bear earliest when the ground about them is tolerably compact; and a fair situation to the sun is indispensable, to give the fruit an early ripening and fine flavour; hence the custom of setting out peach trees in fence corners, and shady grounds, will always prove a source of disappointment to those who thus plant their trees, in a soil so cold as the soil of most parts of this State is found to be; and care should be taken that cattle do not bite off the limbs of the trees, nor break the bark so as to suffer the gum to escape in the beginning of warm weather, when the gum is essential to the blossoming and bearing of the tree. I do not suppose that the loss of gum, to a certain extent, is very injurious to the tree after the fruit is nearly ripe, but I have seldom seen trees bear their fruit well when the bark is broken, or pierced, so as to suffer the gum to escape during the blossoming and bearing season. Even the young peach is apt to fall off, if pierced while very young by insects, so as to suffer the gum to run out.

These are facts which point out plainly, the disposition, (if I may use the term,) of the peach tree; and if our farmers become convinced that they must suit their cultivation and care, to the habits and nature of the tree, we shall have plenty of peaches. Our climate, and much of our soil, is as well adapted to the prosperity of this, or any other fruit tree. We have had some very unfavourable seasons for the peach, and almost all other fruits; but economy and diligence, and proper care, until our trees can acquire a proper size for bearing, is all that is wanting on our part; and we will trust to a kind Providence to bring the seasons round, with their former blessings.

I have purposely avoided technical terms, that this communication may be intelligible to all who feel interested in the prosperity of the peach.

I am, Sir, yours, with very high esteem,

SOLOMON J. SCOTT, M. D.

February 18, 1836.

On Ruta Baga.

No. I.

[FROM THE MAINE FARMER.]

Mr. Holmes,—It may be that I will encourage the raising of ruta baga if I state my success in that crop the last season, though not a remarkable large one, yet as hay and food for cattle has been, it was a profitable one. It grew on just one-fourth of an acre of ground, which yielded 204 bushels, by weight 64lbs. to the bushel—the same as the law requires that potatoes should weigh.

It is supposed by most farmers that 2,000lbs. of this vegetable, and a ton of hay, will sustain our cattle as long, or go as far in our stock as two tons of hay fed out understandingly, or in other words, they are worth as much, pound for pound, as English hay. According to the above number of bushels and weight, there grew on the quarter of an acre 6½ tons and 56 pounds. Hay is worth $20 per ton—if ruta baga, weight for weight, is worth $20 per ton—the six tons and a half and 56 pounds amounts to $130.56—equal to $522.24 cents per acre, when forage is thus high.

I will now give an account of the actual profit, as I sold some, and might have sold the whole at the same rate, for as hay has been high I evidently undersold. Two shillings a bushel I sold for 64 pounds by weight per bushel—at that rate the 204 bushels amount to $68—equal to $272 the acre. All can see that I undersold as forage has been this season—but as the worth of hay is, take one year with another, they are worth and will bring 25 cents the bushel, if kept until April—at that rate my quarter of an acre would bring $51, equal to $204 per acre. Is it worth while to attend to raising ruta baga—this question will be better answered when I make known the expense as I intend in a future communication.

WINTHROP.

On Ruta Baga.

No. II.

Mr. Holmes,—You may recollect that I engaged, in a former communication on my crop of ruta baga the last season, to state the expense which I was at respecting it. The land as I remarked in my former communication consisted of the fourth of an acre, of rather light soil, having formerly some wash from the highway. Potatoes were planted on it the year before, on sward recently broke up—previously it had been mowed many years. The ground was tolerably well manured the year I raised potatoes on it, and I had a fair crop. In May last I manured it again, with new manure from my heaps at the barn, say about four cartfuls on the quarter of an acre. I spread it and ploughed it immediately under, not permitting it to manure the atmosphere. I then harrowed it down level, then let a chain be drawn 2½ feet asunder to mark it for sowing. I then, by hand sowed my seed in the chain marks pretty thick, and a hand followed with a hoe and scraped some loam on to cover it, which took about two hours each. The seed come up well—soon after I sowed the plants over with wood ashes, and I had many plants to give my neighbours, but before they were large enough to set, the ground became weedy. I

hoed it between the rows which took a day's work, when the plants became large enough to set—after giving away some, many remained in the rows. I then hoed the ground with a hoe of common size, right through the rows and thinned them, so that they stood, say 9 inches asunder in the rows, which took three days labour. I hoed them again very soon, or the leaves would have spread so as to render it impossible to have hoed them without injury, which took a day and a half labour, making 5½ days work, besides sowing the seed, say nearly a half day's labour, worth in all $500. The leaves well paid the harvesting. Here is the cost of my 204 bushels of ruta baga, except 25 cents for the seed and manure, and two bushels of ashes.

WINTHROP.

April 18, 1836.

N. B.—Cost—Labour, - - - - -	$5 00
Seed, - - - - - - -	25
Ashes and putting on, - - -	40
Half the manure and spreading, -	2 50
	$8 15

State Policy.

[FROM THE SILK CULTURIST.]

The act lately passed by the legislature of Massachusetts, giving a bounty of $2 on every pound of raw silk growed and reeled within the Commonwealth, is one of those master pieces of State policy for which her legislators have long been distinguished. Though it is highly creditable to the intelligence of the members, and the amount disbursed under its provisions will bring forth its "hundred fold;" yet there are probably some, making high pretensions to a thorough knowledge of political economy, who will consider it a profuse, if not a wanton and wasteful, expenditure of public treasure, and be disposed to censure them for a reckless disregard of the public interest. A narrow and short sighted policy would doubtless condemn the law, and all appropriations made under it, as a profligate expenditure of the people's money; while at the same time the political economist, who takes an enlarged and enlightened view of the consequences which must inevitably result from it, will pronounce it the perfection of political wisdom. A detail of the circumstances under which the law was passed, and its effects upon the agricultural and other interests of the State, will show that we are not mistaken in our ideas concerning it.

The culture and manufacture of silk has for a time been engrossing the attention of most of the States in the Union, several of which have been endeavouring to introduce and foster it by legislative bounties. In this new enterprise Connecticut led off, by offering a bounty of $1 on every hundred mulberry trees, and 50 cents on every pound of reeled silk. This gave the business a little start, and made Connecticut the most favourable State for engaging in it, on account of the bounty, all other advantages being equal. Massachusetts followed by offering the same bounty on every pound of reeled or thrown silk. Vermont, seeing Connecticut and Massachusetts filling with mulberry trees, and inviting the growers of silk to settle within their limits and avail themselves of their liberality, endeavoured to attract

their attention towards her genial soil and climate, by offering them a still more munificent bounty. An act giving a bounty of 10 cents on every pound of cocoons made within the State, was passed at the last session of the legislature. Maine, also, finding that her soil and climate were adapted to the cultivation of the mulberry and rearing of the silk worm, and not being content with the avails of her lumber and granite, invited the silk grower to visit her, and as an inducement, in addition to the low price of lands, offered him a bounty of 5 cents a pound upon cocoons. New-York was also enticing the Yankees to leave New-England and settle in some part of her vast dominions. With these offers before them the silk growers were balancing in their minds the comparative advantages and disadvantages of these respective States, when Massachusetts magnanimously comes forward and offers them $2 a pound for every pound of silk they will grow, reel and throw within her jurisdiction during a period of seven years.

This offer will settle the question, unless the other States pursue a policy equally liberal, and present inducements equally flattering. Without these, Massachusetts will become the great silk growing and manufacturing district of the United States. and wealth will flow in upon her with a flood tide. The bounty will pay all the expense of making the cocoons and reeling the silk, and leave the $4 or $5 a pound, for which it is readily sold, nett profit to the grower and reeler. With this encouragement in Massachusetts, what company or individual will even think of purchasing land in any other State for a plantation? But the consequences will be favourable in other respects. In the first place it will enhance the value of real estate. All lands exclusively devoted to the culture of silk, will be so much withdrawn from other agricultural purposes, and leave the remainder at a proportionably increased value. The manufacturing population of Massachusetts is sustained, at least in part, by the products of her soil; and as this is circumscribed in its limits, its value per acre must rise in the same proportion; and hence, every farmer will feel the beneficial influence of the law, though he may never engage in the culture of silk.

In the second place it will increase the population of the State. The liberal provisions of the law will have an irresistable tendency to call in silk growers and manufacturers from States that pursue a more penurious policy. These emigrants will be found of a very different character from those from the "Emerald Isle." They will bring with them a spirit of industry and enterprise—habits of temperance and economy, and a love of morality and good order—they will cheerfully contribute their proportions of money for the support of the government, and deposit their influence in the common stock in support of the laws and institutions of the State.

PART III.

MISCELLANEOUS INTELLIGENCE.

Salsify.—Though the salsify, or as it is commonly called on account of its assimilation in taste to the oyster, the "vegetable oyster," is one of the most delicious of our garden roots, yet its uses are not generally known or its culture attended to. It is a biennial plant of English origin, and in appearance resembles a small parsnip. It is of easy cultivation, and when parboiled, cut in slices length wise and fried in butter, possesses a flavour so nearly allied to the oyster, that even epicures sometimes find it difficult to distinguish between them. In cultivating this root, the ground should be manured and prepared in the same manner as for beets, carrots or parsnips, and the seed sown in drills at the same distances. The seed should then be covered about half an inch deep, and the surface of the ground rolled down to bring it in contact with the seed and enable it to germinate. When the plants are up they should be thinned and kept free of weeds. Late in the fall the roots may be dug, and if packed in sand and deposited in the cellar will keep fresh till the following spring. The root is smaller than the parsnip, and consequently the product from the same quantity of land is not as great; yet from good land, well cultivated, a liberal crop may be obtained.

We think gardeners in the vicinity of large towns would find their account in cultivating this root for the supply of their markets, as most persons acquainted with it are extravagantly fond of it. It is said to be in much demand in the Boston market.

Demand for Silk.—We understand the demand for raw silk is so great that the products of foreign filatures are selling at $6.50 a pound. The advance in price in Europe is also quite, if not unprecedented. Within a short time the price at Milan has advanced from 24 to 30 per cent. and the finer qualities to 40; and more advance is expected as the manufacturers of Lyons, Zurich and Germany cannot procure stock in sufficient quantities to execute the orders they have already received from New-York. Farmers, therefore, need not be deterred from engaging in its culture by a fear of an overstocked market, as it would now be one of the most desirable and profitable articles of exportation.

The Primitive Earths—are four, viz: clay, sand, lime and magnesia. These are the only earths which enter into the composition of soils; they also enter in very minute portions, into the organization of plants. Sand and clay are by far the most abundant; lime is required but in small proportion: every soil, however, is defective without it. Magnesia is found but in few soils; its place is well supplied by lime; its entire absence, therefore, is not considered any defect.—*Farmer and Gar.*

Beet Sugar.—We find the following article is making the circuit of American periodicals, but cannot be responsible for its correctness.

Dr. Tier of Germany, has invented a process by means of which beet root can be transformed into solid white sugar in the space of eight hours.

The produce in October and December last, under this process, including the molasses, was from 9 to 10 per cent.

Honey a cure for the Gravel.—A number of years since, says a correspondent, I was much afflicted with the gravel, and twice in serious danger, from small stones lodged in the passage. I met with a gentleman who had been in my situation, and got rid of this disorder by sweetening tea with half honey and half sugar. I adopted this remedy and found it effectual. After being fully clear of my disease

for about ten years, I then declined taking honey, and in about three months had a violent fit of my old complaint. I then renewed my practice of taking honey in my tea, and am now more than three score, and have not for the last 27 years had the smallest symptom of the gravel. I have recommended my prescription to many of my acquaintance, and have never known it to fail.—*Phil Exam.*

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Cure for Chilblains.—Take of muriatic acid one part, diluted with water seven parts. Apply this mixture to the affected parts a few times, and the cure is effected.

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Cheap White Paint.—One pound of unslacked lime, 1 pound of Spanish whiting, 1 gallon of sweet milk, 1 gallon of flaxseed oil, 1 table spoonful of salt. Pour on the lime sufficient water to slake it, and while the lime is slaking, pour in the oil so as to cook it thin, add the whiting and salt, then pour on the milk and stir it well.

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A cheap Green Paint.—Take 4lbs. of Roman vitriol, and pour upon it a tea-kettle full of boiling water: when the vitriol is dissolved, add two pounds of pearl ash, and stir the mixture well with a stick until the effervescence ceases; then add a quarter of a pound of pulverized yellow arsenic, and stir the whole together. Lay it on with a paint brush, and if the wall has not been painted before, two or three coats will be necessary. If a pea green be required, put in less, and if an apple green, more of the yellow arsenic. The cost of this paint is less than one-fourth of oil colour, and the beauty far superior.

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General Education.—A strange idea is entertained by many that education unfits persons for labour, and renders them dissatisfied with their condition in life. But what would be said were any of the powers of the body to be in a certain case disused? Suppose a man were to place a bandage over his right eye—to tie up one of his hands—or to attach a ponderous weight to his legs—and, when asked the cause, were to reply, that the glance of that eye might make him covetous—that his hand might pick his neighbour's pocket—or that his feet might carry him into evil company, might it not be fairly replied, that his members were given to use and not to abuse, that their abuse is no argument against their use, and that this suspension of their action was just as contrary to the wise and benevolent purpose of their Creator as their wrong and guilty application? And does this reasoning fail when applied to the mind? Is not the unemployed mental faculty as opposed to the advantage of the individual as the unused physical power? Can the difference between mind and matter overturn the ordinary principles of reasoning and of morals? Besides, how is man to be prepared for the duties he has to discharge? By mere attention to his body? Impossible. The mind must be enlightened and disciplined; and if this be neglected, the man rises but little in character above the beasts that perish, and is wholly unprepared for that state to which he ought to have aspired.—*Wilderspin's Early Discipline.*

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" *Education.*—A better safeguard for liberty than a standing army. If we retrench the wages of the schoolmaster, we must raise the wages of the recruiting sergeant."—*Edward Everett's Toast.*

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A Parishoner complained to his parson that his pew was too far from the pulpit, and that he must purchase one nearer. "Why," said the parson, "Can't you hear distinctly?" "Oh yes. I can hear well enough." "Can't you see plainly?" "Yes, I can see perfectly well." "Then what can be the trouble?" "Why, there are so many in front of me, who catch what you say first, that by the time your words reach my years they are as flat as dish-water."—*Boston Post.*

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The export of Boots and Shoes has increased beyond the expectations of the most sanguine. Those who are best acquainted with it, estimate the amount which will be exported from this State this year, at $20,000,000, of which Lynn alone does one-tenth part. The export last year was $10,500,000, not reckoning towns which made less than $100,000 worth.—*Newburyport Herald.*

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Reason for being a Bachelor.—"My dear Tom," said a young whipster to a bachelor friend, "it's most half past kissing time with you, and you are not married yet—what's the reason, eh? Fair and hearty, well off, what's the reason? Any objection to the sex, eh?"

"W-w-w-why n-n-n-no," replied the other, winking and blinking as if in a convulsion, "but you se-se-see I s-s-s-stutter s-s-so, I never could p-p-p-pop the q-q-q-question!"